

**The Village - Tentative Tract 17439
Drainage Study
City of Lake Forest, Orange County, California**

Prepared for
Trumark Homes
9911 Irvine Center Drive
Suite 150
Irvine, CA 92618

Prepared by
RBF Consulting
14725 Alton Parkway
Irvine, CA 92618

Contact Persons
Trisha Keith, PE
Rebecca Kinney, PE

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1 INTRODUCTION

The following study is the Drainage Study prepared as part of the Tentative Tract 17439 project. The proposed site is located within the City of Lake Forest (City), in Orange County; **see Exhibit 1 –Vicinity Map**. The project involves a 7.0-acre site, which currently consists of a former Chevrolet dealer. The project site is generally bounded by Towne Centre Drive and Auto Center Drive; **see Exhibit 2 – Existing Site Plan**.

1.1 Background and History

The Chevrolet Dealer was constructed in approximately 2002 as part of Tract 14991. The dealership closed in recent years and a portion of the site is currently being used for an automotive repair business.

1.2 Regulatory Setting

This section discusses the Federal, State, and local drainage and water quality policies and requirements applicable to the project site. The section is divided into two sub-sections: Flood Control and Water Quality.

Federal Level

The National Flood Insurance Program (NFIP) was created by Congress in 1968. It provided a means for property owners to financially protect themselves from flood damage. The NFIP offers flood insurance to homeowners, renters and business owners if their community participates in the program. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. The City of Lake Forest is a participating community and must adhere to the NFIP.

Local Level

The local flood control regulations for the City of Lake Forest can be found in the Municipal Code Chapter 7.08 dated 1996.

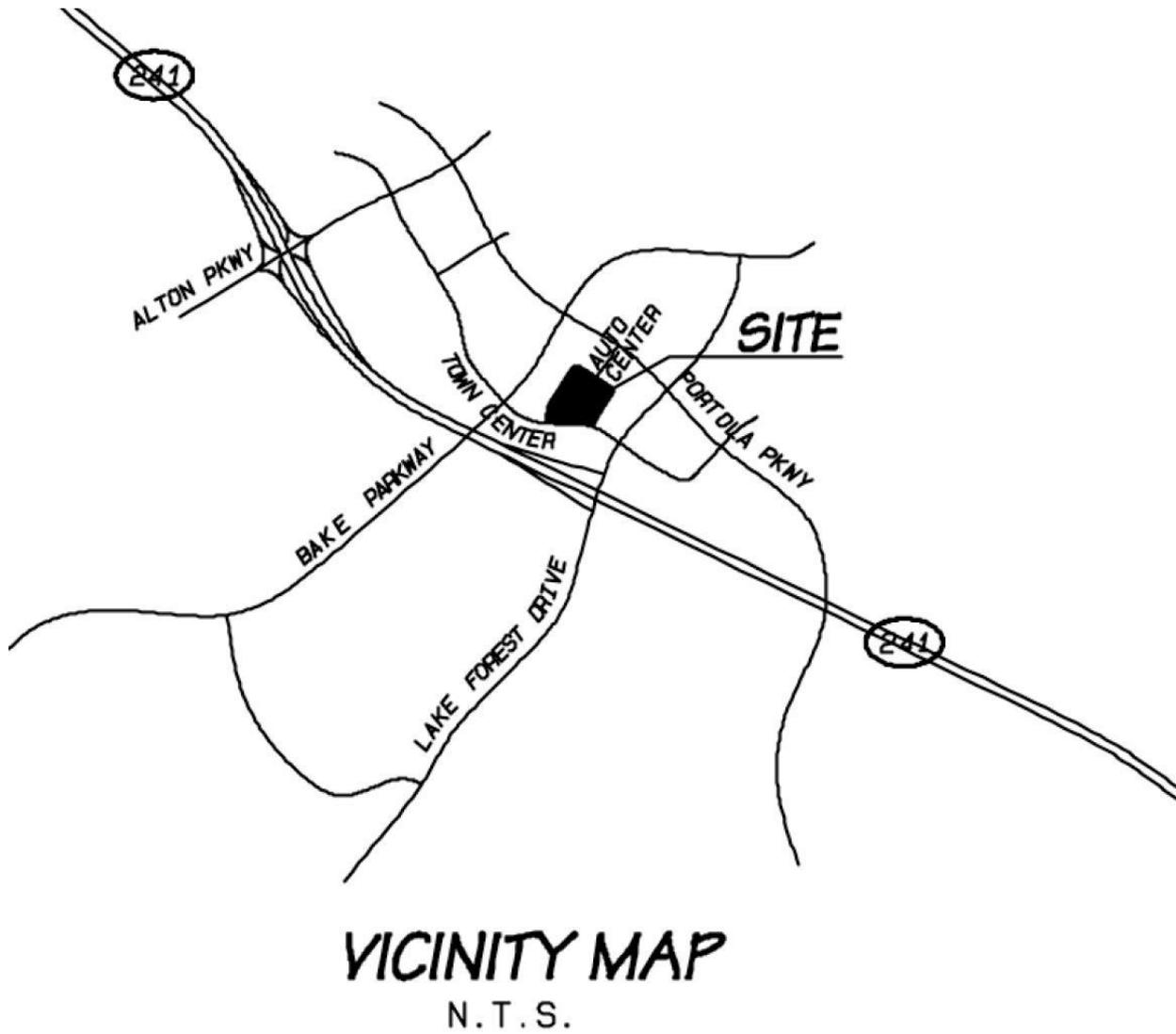


Exhibit 1: Vicinity Map



Project Site

Bake Pky

Portola Pky

Auto Center Dr

Lake Forest Dr

Towne Centre Dr

Alter

241

C:\Documents and Settings\WCHANDOO\Desktop\Work Doc\ExistingSitePlan.mxd, 12/22/2011



0 50 100 200 Feet

Source:

THE VILLAGE
Existing Site Plan

2 EXISTING CONDITIONS

The following sub-sections discuss the existing condition analysis. The purpose of this existing conditions evaluation is to establish a baseline for comparison of the pre-project and the post-project conditions and impact analysis, which is included in Section 4. Baseline conditions investigated include: land use, hydrology, and floodplain mapping.

2.1 Existing Conditions Description

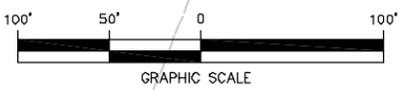
The existing project site consists of a 7.0 acre vacant Chevrolet car dealership in Lake Forest, with an auto repair shop currently operating on a portion of the lot. The site is bounded by the following streets: Towne Centre Drive to the southwest and Auto Center Drive to the northwest, southeast, and northeast. Currently, the project site is fully developed with existing drainage facilities. The site drains to two existing storm drains within Towne Centre Drive. **See Exhibit 3 – Existing Condition Hydrology Map.**

2.2 Hydrology and Drainage

The local existing conditions hydrology analysis of the site shows that there are two main watersheds onsite, with a high point roughly dividing the northern portion of the property in half. The western portion of the site is tributary to an existing storm drain (Line N per Tract 14991 Plans, See Appendix C for Record Drawings) at the southwest corner of the property. Line N has a 25-year design flowrate of 17.2 cfs. Line N flows from the corner of Auto Center and Towne Centre and is eventually tributary to a storm drain in Bake Parkway. The eastern portion of the site is tributary to a storm drain (Line A per Tract 14991 Plans, See Appendix C for Record Drawings) at the southeast corner of the property. Line A has a 25-year design flowrate of 16.5 cfs. Line A flows along Towne Centre Drive eastward to a storm drain in Lake Forest Drive. The existing condition analysis includes the areas of the adjacent streets tributary to Lines A and N at proposed storm drain join points. Onsite soils consist of Type C and D.

Existing Condition Discharge Summary				
Node	25-yr Storm Event		100-yr Storm Event	
	Tc (min)	Q (cfs)	Tc (min)	Q (cfs)
102	7.1	4.3	7.0	5.5
103	7.4	7.5	7.3	9.6
104	9.1	11.7	9.1	15.2
203	9.0	8.3	8.9	10.7
204	9.4	12.8	9.2	16.5
205	9.4	17.5	9.3	22.7

Note: Node 104 and 205 show the Unit Hydrograph discharge



- LEGEND**
- DRAINAGE BOUNDARY
 - SUBAREA BOUNDARY
 - FLOW PATH
 - SUBAREA DESIGNATION AREA (ACRES)
 - HYDROLOGY NODE

2.2.1.1 Methodology

The hydrology analysis was performed in accordance with the Orange County Hydrology Manual. The 2-, 25-, and 100-year storm event peak flow rates were determined using the Advance Engineering Software 2011 (AES 2011) RATSCx program.

Also because the proposed condition contains a detention basin, a small area hydrograph model was used as a basis for comparison at Nodes 104 and 205. The model was prepared using the Advanced Engineering Software (AES) computer program FLOODSCx to generate Small Area Unit Hydrographs. using 5-minute intervals. The hydrographs were generated per the guidelines described in the Orange County Hydrology Manual Section J.

2.2.1.2 Results

Table 1: Existing 25- and 100-year Flowrates

Watershed	Node (Area, Ac)	25-year Flowrate (cfs)	100-Year Flowrate (cfs)
Line A	102	4.3	5.5
	103	7.5	9.6
	104 (3.5)*	11.7	15.2
Line N	203	8.3	10.7
	204	12.8	16.5
	205 (5.8)*	17.5	22.7

Note: Discharges are based on the rational method except at nodes 104 and 205 which utilize the small area hydrograph method and are denoted with an *.

2.3 Floodplain Mapping

The City of Lake Forest is a participant in the National Flood Insurance Program (NFIP). Communities participating in the NFIP must adopt and enforce minimum floodplain management standards, including identification of flood hazards and flooding risks. Participation in the NFIP allows communities to purchase low cost insurance protection against losses from flooding. The project site can be found on published Flood Insurance Rate Map (FIRM) Number 06059C0316J, dated December 3, 2009 and is located in Zone X, which is defined as areas being outside the 500-year floodplain.

3 PROPOSED PROJECT

The following sub-sections discuss the proposed condition analysis. The proposed condition analysis is used, in conjunction with the existing condition analysis, to determine impacts associated with development of the property. Post-project conditions investigated include land use, assumed storm drain configuration, hydrology, and floodplain mapping.

3.1 Proposed Project Description

The project is a 75-unit planned development on 7.0 gross acres (6.9 net acres) within the Foothill Ranch Planned Community (PC 8). The project's proposed density is 10.7 dwelling units per gross acre and 10.85 dwelling units per net acre.

The 75 homes proposed on the site consist of detached two-story single-family residences. Three floorplans are proposed, measuring 1,736 square feet (37 percent of units), 2,102 square feet (43 percent), and 2,240 square feet (20 percent). Each home would have two attached garage spaces, which would be accessed from drives behind the homes. Each home would front on a common walkway and landscaped area, or onto Auto Center Drive. No homes will front onto Towne Centre Drive.

Each residence will have a private, outdoor yard area. These yards will be secured by 5-foot-tall masonry walls with stucco coating. Along Towne Centre Drive, a heavily landscaped slope will lead up to a decorative masonry and stucco wall to provide privacy and sound protection to the community. Decorative garden walls (up to 3 feet in height) and landscaping will enhance the front yards of homes fronting Auto Center Drive by providing a sense of ownership and security while maintaining a feeling of community and interaction between these homes and the surrounding land uses and sidewalks.

The project will include two gated entries, both off of Auto Center Drive. The primary entry, located along the northeastern side of the site facing Portola Parkway, will include two lanes that serve residents and guests (with a call box for guests to contact residents). The secondary entry, located along the northwestern side of the site, will serve residents and emergency vehicles only. Once within the community, 24-foot-wide drive aisles will provide access to onsite parking, garages, and recreational facilities. Onsite drive aisles will incorporate rolled curbs.

The project will include a total of 220 onsite parking spaces, consisting of 150 garage spaces, 68 uncovered spaces, and 2 driveway spaces. The resulting parking ratio is 2.93 spaces per unit (including 2.00 garage spaces per unit, 0.91 uncovered spaces per unit, and the remainder driveway spaces). Additionally, 58 offsite spaces (along Auto Center Drive) could serve the community without affecting the surrounding uses due to the opposing peak use times of the parking spaces—daytime peak usage by the surrounding businesses and nighttime peak usage for the residences. If these offsite spaces are included in the total parking count, there are a total of 278 parking spaces, or 3.71 spaces per unit.

The community is planned to be walkable, allowing for easy connections to the nearby mixed-use developments. A network of pedestrian paseos will allow for convenient connections between the front doors of each unit, onsite recreational facilities, and sidewalks along Towne Centre Drive and Auto Center Drive. Multiple connections will be provided from the onsite walkways to offsite sidewalks to reduce the need for lengthy detours by pedestrians.

At the center of the development is an open space area and recreation facility. This facility will include an outdoor seating area, community congregation space, pool, spa, barbeque, fire pit and bathrooms. A second open space area located to the southwest of this facility will include an outdoor lounge and gathering area.

To enhance water quality on the site, swales will be placed in pedestrian paseo landscaped areas to capture runoff from rooftops and paved areas. Filterra water quality devices or similar devices will be placed at the end of drive aisles, also to capture runoff. Throughout the project, drought-tolerant landscaping is proposed which will limit irrigation runoff during the dry season.

The project also proposes to have an underground detention basin to detain flows match to existing conditions.

3.2 Hydrology and Drainage

The local proposed conditions hydrology analysis of the site shows that there are two main watersheds onsite. The proposed development generally flows from north to south, beginning at the northeast entrance on Auto Center Drive and continuing toward Towne Centre Drive. Similar to the existing condition, a high point extends over most of the site, generally dividing the east and west sides and directing flows to the southwest and southeast. Front portions of the houses will drain toward the common walkways where flows will be directed into swales. The remaining portions of the houses will typically drain to the attached outdoor yard areas where flows will be directed to the drives behind the homes. Flows in the drives will be intercepted by Filterra water quality devices or similar devices located at the end of drive aisles. Stormwater from the swales and water quality devices will then continue in proposed storm drain pipes within the development that will ultimately join existing Lines A and N in Towne Centre Drive.

The storm drain between node 207 and 208 (tributary to Line N) will be upsized to a 4x4 RCB (200 feet long with a 21" outlet) to detain the difference between the existing and proposed flow rate for the 25- and 100-year storms. Future deign level studies may explore other methods of minimizing flow leaving the property. Any proposed method or structure will be reviewed and approved by the City prior to issuance of a grading permit. **See Exhibit 4 – Proposed Condition Hydrology Map.**

3.2.1.1 Methodology

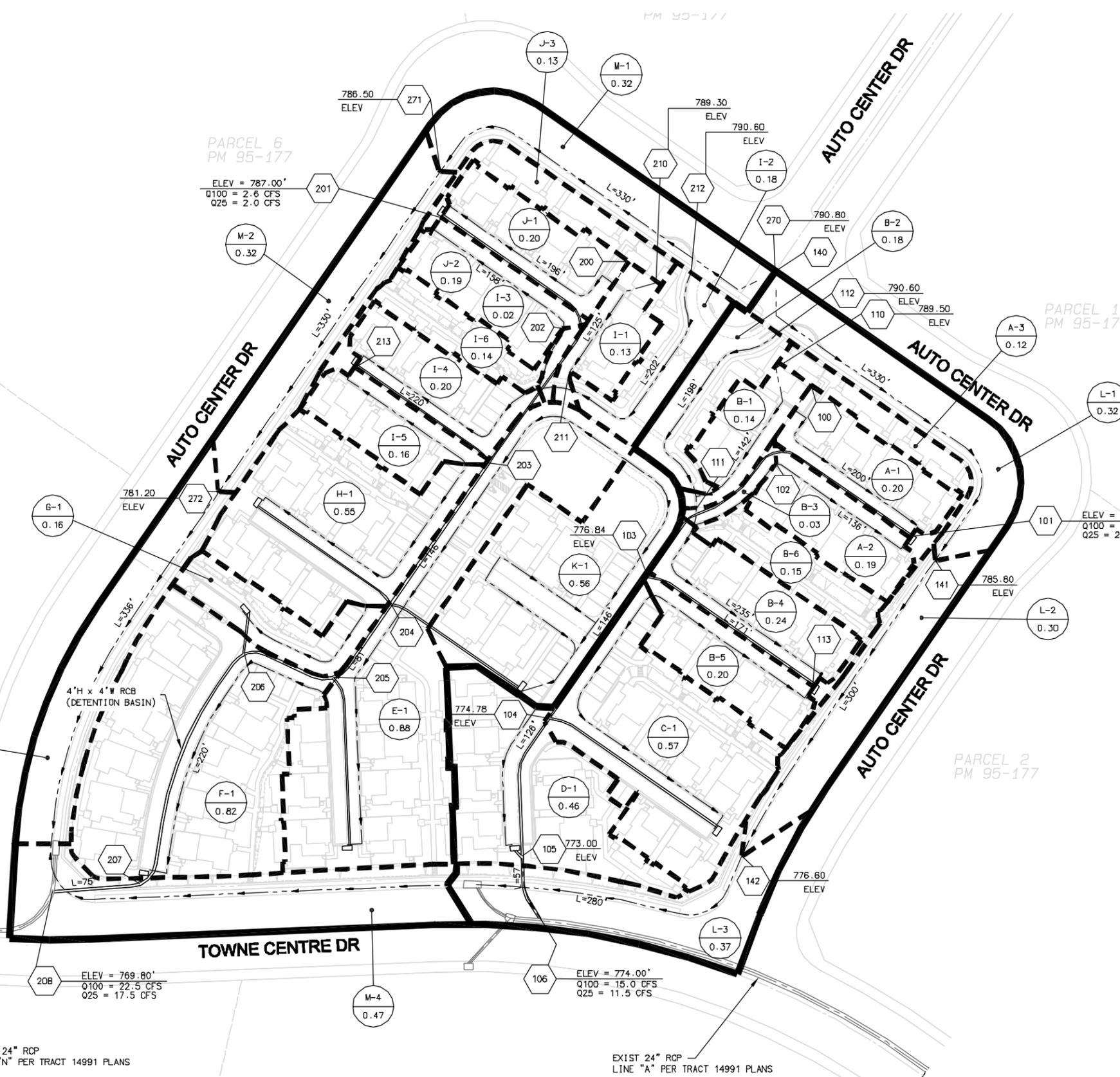
The hydrology analysis was performed in accordance with the Orange County Hydrology Manual. The 2-, 25-, and 100-year storm event peak flow rates were determined using the Advance Engineering Software 2011 (AES 2011) RATSCx program.

Advanced Engineering Software (AES) computer program FLOODSCx was used to generate Small Area Unit Hydrographs using 5-minute intervals for the purpose of detention basin modeling. The hydrographs were generated per the guidelines described in the Orange County Hydrology Manual Section J. Single Area, Free-draining, and Complex Unit Hydrograph models were developed per the Orange County Hydrology Manual. These models were necessary to assess the impacts of a detention basin on the peak discharge. The Free draining models were compared with the Single Area models to assess the need for calibration as required in the Orange County Hydrology Manual and Calibration was performed where necessary before generating the Complex Unit Hydrograph with Basin models.

Proposed Condition Discharge Summary

Node	25-yr Storm Event		100-yr Storm Event	
	Tc (min)	Q (cfs)	Tc (min)	Q (cfs)
101	5.1	2.0	5.1	2.6
103	7.6	5.2	7.5	6.7
104	8.0	6.5	7.8	8.5
105	6.8	8.0	6.6	10.4
106	7.9	11.5	7.7	15.0
201	5.9	2.0	5.9	2.6
203	7.0	5.0	6.9	6.4
204	7.4	8.3	7.3	10.8
205	7.4	11.0	7.3	14.6
206	7.6	11.2	7.4	15.1
207	8.0	13.4	7.9	18.1
208	8.1	17.5	7.9	22.5

Note: Node 106 and 208 show the Unit Hydrograph discharge



EXIST 24" RCP LINE "N" PER TRACT 14991 PLANS

EXIST 24" RCP LINE "A" PER TRACT 14991 PLANS

- LEGEND**
- DRAINAGE BOUNDARY
 - SUBAREA BOUNDARY
 - FLOW PATH
 - SUBAREA DESIGNATION AREA (ACRES)
 - HYDROLOGY NODE

3.2.1.2 Results

Table 2: Proposed 25- and 100-year Flowrates

Watershed	Node (Area, Ac)	25-year Flowrate (cfs)	100-Year Flowrate (cfs)
Line A	101	2.0	2.6
	103	5.2	6.7
	104	6.5	8.5
	105	8.0	10.4
	106 (3.5)*	11.5	15.0
Line N	201	2.0	2.6
	203	5.0	6.4
	204	8.4	10.8
	205	11.2	14.6
	206	11.6	15.1
	207	13.9	18.1
	208 (5.8)*	17.5 ¹	22.5 ¹

Note: Discharges are based on the rational method except at nodes 106 and 208 which utilize the small area hydrograph method and are denoted with an *.

¹ – Q includes the underground detention basin.

3.3 Floodplain Mapping

The site is located in Zone X, according to FIRM Number 06059C0316J, dated December 3, 2009. The proposed site is outside of the 1-percent-annual floodplain.

4 IMPACTS

The following sub-sections discuss the potential impacts due to the development of the proposed project. The impacts are divided into two sub-sections: hydrology and drainage impacts, and floodplain mapping.

4.1 Hydrology and Drainage

The following table provides a comparison of the existing and proposed hydrology for the 25- and 100-year storm events. These discharges are based on the small hydrograph procedure.

Table 3: Flowrate Comparison Table

Tributary To	Area (Acres)			25-year Flow (cfs)			100-year Flow (cfs)		
	Existing	Proposed	Δ	Existing	Proposed	Δ	Existing	Proposed	Δ
	Line A	3.5	3.5	0	11.7	11.5	-1%	15.2	15.0	-1%
Line N	5.8	5.8	0	17.5	17.5 ¹	-	22.7	22.5	-1%

Note: Discharges are based on the Small Area Unit Hydrograph method.

¹ – Q includes the underground detention basin.

4.2 Floodplain Mapping

The proposed site improvements are located in Zone X and will not impact the 1-percent-annual-chance flood plain.

5 CONCLUSION

The resulting flowrates for the proposed condition are similar to the existing condition because the existing condition is a fully developed commercial site. The project includes an underground detention basin to maintain the existing condition flows for the 25- and 100-year flow to Line N. The basin, as currently planned, will be within the development's private street right of way and will be 4' wide by 4' high reinforced concrete box that is approximately 200 feet long with a 21-inch outlet pipe. Future design level studies may explore other methods of minimizing flow leaving the property to be the same as the existing condition flows. Any proposed method or structure will be reviewed and approved by the City to confirm existing flows are not exceeded prior to issuance of a grading permit. With the detention basin or similar measures in place, the existing flowrates will be maintained in the proposed condition and therefore there will not be any adverse impacts to the watershed by the development of Tentative Tract 17439. All onsite facilities will be sized in accordance with City of Lake Forest Standards.

6 REFERENCES

County of Orange. *Orange County Hydrology Manual*. 1996.

National Flood Insurance Program: The official site of the NFIP, <http://www.floodsmart.gov>, August 25, 2011.

Appendix A: Existing Condition Hydrology

COMMERCIAL D 0.15 0.20 0.100 75 5.61
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp (INCH/HR) = 0.24
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
 SUBAREA RUNOFF(CFS) = 2.63
 TOTAL AREA(ACRES) = 0.65 PEAK FLOW RATE(CFS) = 2.63

 FLOW PROCESS FROM NODE 101.00 TO NODE 102.00 IS CODE = 91
 >>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<

UPSTREAM NODE ELEVATION(FEET) = 783.50
 DOWNSTREAM NODE ELEVATION(FEET) = 783.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 139.00
 "V" GUTTER WIDTH(FEET) = 3.00 GUTTER HIKE(FEET) = 0.125
 PAVEMENT LIP(FEET) = 0.020 MANNING'S N = .0150
 PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
 MAXIMUM DEPTH(FEET) = 2.00
 * 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.960
 SUBAREA LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	GROUP	SCS SOIL	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN
COMMERCIAL	C		0.62	0.25	0.100	69

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp (INCH/HR) = 0.25
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW (CFS) = 3.73
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY (FEET/SEC.) = 1.57
 AVERAGE FLOW DEPTH (FEET) = 0.32 FLOOD WIDTH (FEET) = 20.84
 "V" GUTTER FLOW TRAVEL TIME (MIN.) = 1.47 Tc (MIN.) = 7.08
 SUBAREA AREA (ACRES) = 0.62 SUBAREA RUNOFF (CFS) = 2.20
 EFFECTIVE AREA (ACRES) = 1.27 SUBAREA AVERAGE Fp (INCH/HR) = 0.02
 AREA-AVERAGED Fp (INCH/HR) = 0.24 AREA-AVERAGED Ap = 0.10
 TOTAL AREA (ACRES) = 1.3 PEAK FLOW RATE (CFS) = 4.50

END OF SUBAREA "V" GUTTER HYDRAULICS:
 DEPTH (FEET) = 0.34 FLOOD WIDTH (FEET) = 22.47
 FLOW VELOCITY (FEET/SEC.) = 1.65 DEPTH*VELOCITY (FT*FT/SEC) = 0.56
 LONGEST FLOWPATH FROM NODE 100.00 TO NODE 102.00 = 389.00 FEET.

 FLOW PROCESS FROM NODE 102.00 TO NODE 103.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPE SIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM (FEET) = 779.73 DOWNSTREAM (FEET) = 774.60
 FLOW LENGTH (FEET) = 223.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER (INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.7 INCHES
 PIPE-FLOW VELOCITY (FEET/SEC.) = 7.46
 ESTIMATED PIPE DIAMETER (INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW (CFS) = 4.50
 PIPE TRAVEL TIME (MIN.) = 7.58
 LONGEST FLOWPATH FROM NODE 100.00 TO NODE 103.00 = 612.00 FEET.

 FLOW PROCESS FROM NODE 103.00 TO NODE 103.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

 MAINLINE Tc (MIN.) = 7.58
 * 25 YEAR RAINFALL INTENSITY (INCH/HR) = 3.811
 SUBAREA LOSS RATE DATA (AMC II):
 DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
 COMMERCIAL C 0.50 0.25 0.100 69 5.61

 RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
 (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
 (c) Copyright 1983-2011 Advanced Engineering Software (aes)
 Ver. 18.0 Release Date: 07/01/2011 License ID 1264

Analysis prepared by:
 RfB Consulting

 * Existing Area A 25-year

 ***** DESCRIPTION OF STUDY *****

FILE NAME: 8112EA25.DAT
 TIME/DATE OF STUDY: 15:05 05/16/2012
 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

---*TIME-OF-CONCENTRATION MODEL*---

USER SPECIFIED STORM EVENT (YEAR) = 25.00
 SPECIFIED MINIMUM PIPE SIZE (INCH) = 18.00
 SPECIFIED PERCENT OF GRADIENTS (DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
 DATA BANK RAINFALL USED
 ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL
 HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING
 WIDTH CROSSFALL IN- / OUT- / PARK- HEIGHT WIDTH LIP HIKE FACTOR
 NO. (FT) (FT) SIDE / SIDE/ WAY (FT) (FT) (FT) (n)

1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0312	0.167	0.0150
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GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
 2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)
 *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
 *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

 FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

 INITIAL SUBAREA FLOW-LENGTH (FEET) = 250.00
 ELEVATION DATA: UPSTREAM (FEET) = 790.80 DOWNSTREAM (FEET) = 783.50

Tc = K * [(LENGTH** 3.00) / (ELEVATION CHANGE)]**0.20
 SUBAREA ANALYSIS USED MINIMUM Tc (MIN.) = 5.610
 * 25 YEAR RAINFALL INTENSITY (INCH/HR) = 4.519
 SUBAREA Tc AND LOSS RATE DATA (AMC II):
 DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS Tc
 LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)
 COMMERCIAL C 0.50 0.25 0.100 69 5.61

```

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.84
STREET FLOW TRAVEL TIME(MIN.) = 2.03 Tc(MIN.) = 10.66
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.143
SUBAREA LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
GROUP (ACRES) (INCH/HR) (DECIMAL) CN
LAND USE C 0.42 0.25 0.100 69
COMMERCIAL,
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA AREA(ACRES) = 0.42 SUBAREA RUNOFF(CFS) = 1.18
EFFECTIVE AREA(ACRES) = 1.16 AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.25 AREA-AVERAGED Ap = 0.10
TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 3.26
    
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END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.38 HALFSTREET FLOOD WIDTH(FEET) = 10.94
FLOW VELOCITY(FEET/SEC.) = 2.35 DEPTH*VELOCITY(FT*FT/SEC.) = 0.89
LONGEST FLOWPATH FROM NODE 120.00 TO NODE 104.00 = 910.00 FEET.
*****
FLOW PROCESS FROM NODE 104.00 TO NODE 104.00 IS CODE = 1
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<<
*****
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.66
RAINFALL INTENSITY(INCH/HR) = 3.14
AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.25
AREA-AVERAGED Ap = 0.10
EFFECTIVE STREAM AREA(ACRES) = 1.16
TOTAL STREAM AREA(ACRES) = 1.16
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.26
    
```

```

** CONFLUENCE DATA **
STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
1 7.87 7.80 3.750 0.25( 0.02) 0.10 2.3 100.00
2 3.26 10.66 3.143 0.25( 0.02) 0.10 1.2 120.00
    
```

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

```

** PEAK FLOW RATE TABLE **
STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
1 10.72 7.80 3.750 0.25( 0.02) 0.10 3.2 100.00
2 9.84 10.66 3.143 0.25( 0.02) 0.10 3.5 120.00
    
```

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 10.72 Tc(MIN.) = 7.80
EFFECTIVE AREA(ACRES) = 3.16 AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.25 AREA-AVERAGED Ap = 0.10
TOTAL AREA(ACRES) = 3.5
LONGEST FLOWPATH FROM NODE 120.00 TO NODE 104.00 = 910.00 FEET.

```

END OF STUDY SUMMARY:
*****
TOTAL AREA(ACRES) = 3.5 Tc(MIN.) = 7.80
EFFECTIVE AREA(ACRES) = 3.16 AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.25 AREA-AVERAGED Ap = 0.10
PEAK FLOW RATE(CFS) = 10.72
    
```

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** PEAK FLOW RATE TABLE **
STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
1 10.72 7.80 3.750 0.25( 0.02) 0.10 3.2 100.00
2 9.84 10.66 3.143 0.25( 0.02) 0.10 3.5 120.00
    
```

END OF RATIONAL METHOD ANALYSIS


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*****
RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
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Analysis prepared by:
RBF Consulting

*****
* Existing Area N 25-year
*
*
*****
DESCRIPTION OF STUDY *****
*****
*****
FILE NAME: 8112EN25.DAT
TIME/DATE OF STUDY: 15:08 05/16/2012
*****
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
*****
--*TIME-OF-CONCENTRATION MODEL*--
*****
USER SPECIFIED STORM EVENT (YEAR) = 25.00
SPECIFIED MINIMUM PIPE SIZE (INCH) = 18.00
SPECIFIED PERCENT OF GRADIENTS (DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
*DATA BANK RAINFALL USED*
*ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*
*****
*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING
WIDTH CROSSFALL IN- / OUT-/PARK- HEIGHT WIDTH LIP HIKE FACTOR
NO. (FT) (FT) SIDE / SIDE/ WAY (FT) (FT) (FT) (h)
1 30.0 20.0 0.018/0.018/0.020 0.67 2.00 0.0312 0.167 0.0150
2 32.0 27.0 0.020/0.020/ 0.67 2.00 0.0312 0.167 0.0150
*****
GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
1. Relative Flow-Depth = 1.00 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)
*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED
*****
FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21
*****
RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
*****
INITIAL SUBAREA FLOW-LENGTH (FEET) = 330.00
ELEVATION DATA: UPSTREAM (FEET) = 790.80 DOWNSTREAM (FEET) = 784.00
Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
SUBAREA ANALYSIS USED MINIMUM Tc (MIN.) = 6.722
* 25 YEAR RAINFALL INTENSITY (INCH/HR) = 4.080
SUBAREA Tc AND LOSS RATE DATA (AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS Tc
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) (INCH/HR) (MIN.)
*****

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*****
COMMERCIAL D 0.81 0.20 0.100 75 6.72
COMMERCIAL C 0.04 0.25 0.100 69 6.72
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp (INCH/HR) = 0.20
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA RUNOFF (CFS) = 3.11 PEAK FLOW RATE (CFS) = 3.11
TOTAL AREA (ACRES) = 0.85
*****
FLOW PROCESS FROM NODE 201.00 TO NODE 202.00 IS CODE = 91
*****
>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
*****
UPSTREAM NODE ELEVATION (FEET) = 784.00
DOWNSTREAM NODE ELEVATION (FEET) = 783.00
CHANNEL LENGTH THRU SUBAREA (FEET) = 173.00
"V" GUTTER WIDTH (FEET) = 5.00 GUTTER HIKE (FEET) = 0.123
PAVEMENT LIP (FEET) = 0.020 MANNING'S N = 0.150
PAVEMENT CROSSFALL (DECIMAL NOTATION) = 0.02000
MAXIMUM DEPTH (FEET) = 2.00
* 25 YEAR RAINFALL INTENSITY (INCH/HR) = 3.678
SUBAREA LOSS RATE DATA (AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.31 0.25 0.100 69
COMMERCIAL D 0.95 0.20 0.100 75
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp (INCH/HR) = 0.21
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
TRAVEL TIME COMPUTED USING ESTIMATED FLOW (CFS) = 5.17
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY (FEET/SEC.) = 2.14
AVERAGE FLOW DEPTH (FEET) = 0.30 FLOOD WIDTH (FEET) = 20.69
"V" GUTTER FLOW TRAVEL TIME (MIN.) = 1.35 Tc (MIN.) = 8.07
SUBAREA AREA (ACRES) = 1.26 SUBAREA RUNOFF (CFS) = 4.15
EFFECTIVE AREA (ACRES) = 2.11 AREA-AVERAGED Fm (INCH/HR) = 0.02
AREA-AVERAGED Fp (INCH/HR) = 0.21 AREA-AVERAGED Ap = 0.10
TOTAL AREA (ACRES) = 2.1 PEAK FLOW RATE (CFS) = 6.95
*****
END OF SUBAREA "V" GUTTER HYDRAULICS:
DEPTH (FEET) = 0.33 FLOOD WIDTH (FEET) = 23.77
FLOW VELOCITY (FEET/SEC.) = 2.24 DEPTH*VELOCITY (FT*FT/SEC) = 0.74
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 202.00 = 503.00 FEET.
*****
FLOW PROCESS FROM NODE 202.00 TO NODE 203.00 IS CODE = 91
*****
>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
*****
UPSTREAM NODE ELEVATION (FEET) = 783.00
DOWNSTREAM NODE ELEVATION (FEET) = 780.40
CHANNEL LENGTH THRU SUBAREA (FEET) = 172.00
"V" GUTTER WIDTH (FEET) = 5.00 GUTTER HIKE (FEET) = 0.123
PAVEMENT LIP (FEET) = 0.020 MANNING'S N = 0.150
PAVEMENT CROSSFALL (DECIMAL NOTATION) = 0.02000
MAXIMUM DEPTH (FEET) = 2.00
* 25 YEAR RAINFALL INTENSITY (INCH/HR) = 3.477
SUBAREA LOSS RATE DATA (AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.40 0.25 0.100 69
COMMERCIAL D 0.19 0.20 0.100 75
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp (INCH/HR) = 0.23
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
TRAVEL TIME COMPUTED USING ESTIMATED FLOW (CFS) = 7.86
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY (FEET/SEC.) = 3.40
AVERAGE FLOW DEPTH (FEET) = 0.29 FLOOD WIDTH (FEET) = 20.14
*****

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AREA-AVERAGED Fp(INCH/HR) = 0.21
 AREA-AVERAGED Ap = 0.10
 EFFECTIVE STREAM AREA(ACRES) = 1.09
 TOTAL STREAM AREA(ACRES) = 1.09
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.00

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap (ACRES)	Ae (ACRES)	HEADWATER NODE
1	12.65	9.30	3.395	0.23(0.02)	0.10	4.2	200.00
2	3.00	11.05	3.080	0.21(0.02)	0.10	1.1	230.00

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO CONFLUENCE FORMULA USED FOR 2 STREAMS.

*** PEAK FLOW RATE TABLE ***

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap (ACRES)	Ae (ACRES)	HEADWATER NODE
1	15.44	9.30	3.395	0.22(0.02)	0.10	5.1	200.00
2	14.47	11.05	3.080	0.22(0.02)	0.10	5.2	230.00

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 15.44 Tc(MIN.) = 9.30
 EFFECTIVE AREA(ACRES) = 5.08 AREA-AVERAGED Fm(INCH/HR) = 0.02
 AREA-AVERAGED Fp(INCH/HR) = 0.22 AREA-AVERAGED Ap = 0.10
 TOTAL AREA(ACRES) = 5.2
 LONGEST FLOWPATH FROM NODE 230.00 TO NODE 205.00 = 996.00 FEET.

 FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 81
 >>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

MAINLINE Tc(MIN.) = 9.30
 * 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.395
 SUBAREA LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN
COMMERCIAL	C	0.50	0.25	0.100	69
COMMERCIAL	D	0.01	0.20	0.100	75
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25					
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100					
SUBAREA AREA(ACRES) = 0.51					
EFFECTIVE AREA(ACRES) = 5.59					
AREA-AVERAGED Fp(INCH/HR) = 0.23					
AREA-AVERAGED Ap = 0.10					
TOTAL AREA(ACRES) = 5.8					
PEAK FLOW RATE(CFS) = 16.96					

END OF STUDY SUMMARY:
 TOTAL AREA(ACRES) = 5.8 Tc(MIN.) = 9.30
 EFFECTIVE AREA(ACRES) = 5.59 AREA-AVERAGED Fm(INCH/HR) = 0.02
 AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.100
 PEAK FLOW RATE(CFS) = 16.96

*** PEAK FLOW RATE TABLE ***

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap (ACRES)	Ae (ACRES)	HEADWATER NODE
1	16.96	9.30	3.395	0.23(0.02)	0.10	5.6	200.00
2	15.85	11.05	3.080	0.23(0.02)	0.10	5.8	230.00

END OF RATIONAL METHOD ANALYSIS

SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
 SUBAREA AREA(ACRES) = 0.34 SUBAREA RUNOFF(CFS) = 1.02
 EFFECTIVE AREA(ACRES) = 0.66 AREA-AVERAGED Fm(INCH/HR) = 0.02
 AREA-AVERAGED Fp(INCH/HR) = 0.20 AREA-AVERAGED Ap = 0.10
 TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 1.98

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.31 HALFBESTREET FLOOD WIDTH(FEET) = 7.48
 FLOW VELOCITY(FEET/SEC.) = 2.64 DEPTH*VELOCITY(FT*FT/SEC.) = 0.81
 LONGEST FLOWPATH FROM NODE 230.00 TO NODE 205.00 = 660.00 FEET.

 FLOW PROCESS FROM NODE 232.00 TO NODE 205.00 IS CODE = 62
 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<<

>>>>(STREET TABLE SECTION # 2 USED)<<<<<<
 UPSTREAM ELEVATION(FEET) = 781.20 DOWNSTREAM ELEVATION(FEET) = 769.80
 STREET LENGTH(FEET) = 336.00 CURB HEIGHT(INCHES) = 8.0
 STREET HALFWIDTH(FEET) = 32.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 27.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
 SPECIFIED FRICTION OF HALFBESTREETS CARRYING RUNOFF = 1
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150

***TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.57
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.30
 HALFBESTREET FLOOD WIDTH(FEET) = 7.07

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.73
 PRODUCT OF DEPTH*VELOCITY(FT*FT/SEC.) = 1.12
 STREET FLOW TRAVEL TIME(MIN.) = 1.50 Tc(MIN.) = 11.05
 * 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.080

SUBAREA LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN
COMMERCIAL	C	0.25	0.25	0.100	69
COMMERCIAL	D	0.18	0.20	0.100	75
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.23					
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100					
SUBAREA AREA(ACRES) = 0.43					
EFFECTIVE AREA(ACRES) = 1.09					
AREA-AVERAGED Fp(INCH/HR) = 0.02					
AREA-AVERAGED Ap = 0.10					
TOTAL AREA(ACRES) = 1.1					
PEAK FLOW RATE(CFS) = 3.00					

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.31 HALFBESTREET FLOOD WIDTH(FEET) = 7.65
 FLOW VELOCITY(FEET/SEC.) = 3.87 DEPTH*VELOCITY(FT*FT/SEC.) = 1.20
 LONGEST FLOWPATH FROM NODE 230.00 TO NODE 205.00 = 996.00 FEET.

 FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 1
 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.05
 RAINFALL INTENSITY(INCH/HR) = 3.08
 AREA-AVERAGED Fm(INCH/HR) = 0.02

Date: 12/26/12 File name: 8112EN00.RES

COMMERCIAL D 0.81 0.20 0.100 91 6.72
 COMMERCIAL C 0.04 0.25 0.100 86 6.72
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp (INCH/HR) = 0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
 SUBAREA RUNOFF (CFS) = 3.98
 TOTAL AREA (ACRES) = 0.85 PEAK FLOW RATE (CFS) = 3.98

FLOW PROCESS FROM NODE 201.00 TO NODE 202.00 IS CODE = 91
 >>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<<

UPSTREAM NODE ELEVATION (FEET) = 784.00
 DOWNSTREAM NODE ELEVATION (FEET) = 783.00
 CHANNEL LENGTH THRU SUBAREA (FEET) = 173.00
 "V" GUTTER WIDTH (FEET) = 5.00 GUTTER HIKE (FEET) = 0.123
 PAVEMENT LIP (FEET) = 0.020 MANNING'S N = .0150
 PAVEMENT CROSSFALL (DECIMAL NOTATION) = 0.02000
 MAXIMUM DEPTH (FEET) = 2.00
 * 100 YEAR RAINFALL INTENSITY (INCH/HR) = 4.721

SUBAREA LOSS RATE DATA (AMC III):
 DEVELOPMENT TYPE/ SCS SOIL AREA Fp (INCH/HR) Ap (DECIMAL) CN
 LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN
 COMMERCIAL C 0.31 0.25 0.100 86
 COMMERCIAL D 0.95 0.20 0.100 91
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp (INCH/HR) = 0.21
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
 SUBAREA AVERAGE PERVIOUS ESTIMATED FLOW (CFS) = 6.64
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW (CFS) = 2.23
 AVERAGE FLOW DEPTH (FEET) = 0.33 FLOOD WIDTH (FEET) = 23.23
 "V" GUTTER FLOW TRAVEL TIME (MIN.) = 1.29 Tc (MIN.) = 8.02
 SUBAREA AREA (ACRES) = 1.26 SUBAREA RUNOFF (CFS) = 5.33
 EFFECTIVE AREA (ACRES) = 2.11 AREA-AVERAGED Fm (INCH/HR) = 0.02
 AREA-AVERAGED Fp (INCH/HR) = 0.21 AREA-AVERAGED Ap = 0.10
 TOTAL AREA (ACRES) = 2.1 PEAK FLOW RATE (CFS) = 8.93

END OF SUBAREA "V" GUTTER HYDRAULICS:
 DEPTH (FEET) = 0.36 FLOOD WIDTH (FEET) = 26.49
 FLOW VELOCITY (FEET/SEC.) = 2.35 DEPTH*VELOCITY (FT*FT/SEC) = 0.84
 LONGEST FLOWPATH FROM NODE 200.00 TO NODE 202.00 = 503.00 FEET.

FLOW PROCESS FROM NODE 202.00 TO NODE 203.00 IS CODE = 91
 >>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<<

UPSTREAM NODE ELEVATION (FEET) = 783.00
 DOWNSTREAM NODE ELEVATION (FEET) = 780.40
 CHANNEL LENGTH THRU SUBAREA (FEET) = 172.00
 "V" GUTTER WIDTH (FEET) = 5.00 GUTTER HIKE (FEET) = 0.123
 PAVEMENT LIP (FEET) = 0.020 MANNING'S N = .0150
 PAVEMENT CROSSFALL (DECIMAL NOTATION) = 0.02000
 MAXIMUM DEPTH (FEET) = 2.00
 * 100 YEAR RAINFALL INTENSITY (INCH/HR) = 4.468

SUBAREA LOSS RATE DATA (AMC III):
 DEVELOPMENT TYPE/ SCS SOIL AREA Fp (INCH/HR) Ap (DECIMAL) CN
 LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN
 COMMERCIAL C 0.40 0.25 0.100 86
 COMMERCIAL D 0.19 0.20 0.100 91
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp (INCH/HR) = 0.23
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
 SUBAREA AVERAGE PERVIOUS ESTIMATED FLOW (CFS) = 10.11
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW (CFS) = 3.54
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY (FEET/SEC.) = 22.68
 AVERAGE FLOW DEPTH (FEET) = 0.32 FLOOD WIDTH (FEET) = 22.68

Date: 12/26/12 File name: 8112EN00.RES

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Analysis prepared by:
 RBF Consulting

 * Existing Area N 100-year
 *
 *
 *

FILE NAME: 8112EN00.DAT
 TIME/DATE OF STUDY: 15:09 05/16/2012

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
 ---*TIME-OF-CONCENTRATION MODEL*---

USER SPECIFIED STORM EVENT (YEAR) = 100.00
 SPECIFIED MINIMUM PIPE SIZE (INCH) = 18.00
 SPECIFIED PERCENT OF GRADIENTS (DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
 DATA BANK RAINFALL USED
 ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL
 HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING
 WIDTH CROSSFALL IN- / OUT- / PARK- HEIGHT WIDTH LIP HIKE FACTOR
 NO. (FT) (FT) SIDE / SIDE/ WAY (FT) (FT) (FT) (n) (n)
 1 30.0 20.0 0.018/0.018/0.020 0.67 2.00 0.0312 0.167 0.0150
 2 32.0 27.0 0.020/0.020/ --- 0.67 2.00 0.0312 0.167 0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
 1. Relative Flow-Depth = 1.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
 2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
 *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

INITIAL SUBAREA FLOW-LENGTH (FEET) = 330.00
 ELEVATION DATA: UPSTREAM (FEET) = 790.80 DOWNSTREAM (FEET) = 784.00

Tc = K*(LENGTH** 3.00)/(ELEVATION CHANGE)**0.20
 SUBAREA ANALYSIS USED MINIMUM Tc (MIN.) = 6.722
 * 100 YEAR RAINFALL INTENSITY (INCH/HR) = 5.222
 SUBAREA Tc AND LOSS RATE DATA (AMC III):
 DEVELOPMENT TYPE/ SCS SOIL AREA Fp (INCH/HR) Ap (DECIMAL) CN (MIN.)
 LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)

AREA-AVERAGED Fp (INCH/HR) = 0.21
 AREA-AVERAGED Ap = 0.10
 EFFECTIVE STREAM AREA (ACRES) = 1.09
 TOTAL STREAM AREA (ACRES) = 1.09
 PEAK FLOW RATE (CFS) AT CONFLUENCE = 3.87

** CONFLUENCE DATA **
 STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
 NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
 1 16.30 9.19 4.366 0.23(0.02) 0.10 4.2 200.00
 2 3.87 10.87 3.966 0.21(0.02) 0.10 1.1 230.00

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **
 STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
 NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
 1 19.90 9.19 4.366 0.22(0.02) 0.10 5.1 200.00
 2 18.66 10.87 3.966 0.22(0.02) 0.10 5.2 230.00

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE (CFS) = 19.90 TC (MIN.) = 9.19
 EFFECTIVE AREA (ACRES) = 5.08 AREA-AVERAGED Fm (INCH/HR) = 0.02
 AREA-AVERAGED Fp (INCH/HR) = 0.22 AREA-AVERAGED Ap = 0.10
 TOTAL AREA (ACRES) = 5.2
 LONGEST FLOWPATH FROM NODE 230.00 TO NODE 205.00 = 996.00 FEET.

 FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 81
 >>>> ADDITION OF SUBAREA TO MAINLINE PEAK FLOW <<<<<<

MAINLINE TC (MIN.) = 9.19
 * 100 YEAR RAINFALL INTENSITY (INCH/HR) = 4.366
 SUBAREA LOSS RATE DATA (AMC III):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	CN	SCS
COMMERCIAL	C	0.50	0.25	0.100	86	
COMMERCIAL	D	0.01	0.20	0.100	91	
SUBAREA AVERAGE Pervious Loss Rate, Fp (INCH/HR) = 0.25						
SUBAREA AVERAGE Pervious Area Fraction, Ap = 0.100						
SUBAREA AREA (ACRES) = 0.51 SUBAREA RUNOFF (CFS) = 1.99						
EFFECTIVE AREA (ACRES) = 5.59 AREA-AVERAGED Fm (INCH/HR) = 0.02						
AREA-AVERAGED Fp (INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.10						
TOTAL AREA (ACRES) = 5.8 PEAK FLOW RATE (CFS) = 21.86						

END OF STUDY SUMMARY:
 TOTAL AREA (ACRES) = 5.8 TC (MIN.) = 9.19
 EFFECTIVE AREA (ACRES) = 5.59 AREA-AVERAGED Fm (INCH/HR) = 0.02
 AREA-AVERAGED Fp (INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.100
 PEAK FLOW RATE (CFS) = 21.86

** PEAK FLOW RATE TABLE **
 STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
 NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
 1 21.86 9.19 4.366 0.23(0.02) 0.10 5.6 200.00
 2 20.44 10.87 3.966 0.23(0.02) 0.10 5.8 230.00

END OF RATIONAL METHOD ANALYSIS

SUBAREA AVERAGE Pervious Area Fraction, Ap = 0.100
 SUBAREA AREA (ACRES) = 0.34 SUBAREA RUNOFF (CFS) = 1.31
 EFFECTIVE AREA (ACRES) = 0.66 AREA-AVERAGED Fm (INCH/HR) = 0.02
 AREA-AVERAGED Fp (INCH/HR) = 0.20 AREA-AVERAGED Ap = 0.10
 TOTAL AREA (ACRES) = 0.7 PEAK FLOW RATE (CFS) = 2.54

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH (FEET) = 0.33 HALFSTREET FLOOD WIDTH (FEET) = 8.53
 FLOW VELOCITY (FEET/SEC.) = 2.77 DEPTH*VELOCITY (FT*FT/SEC.) = 0.91
 LONGEST FLOWPATH FROM NODE 230.00 TO NODE 205.00 = 660.00 FEET.

 FLOW PROCESS FROM NODE 232.00 TO NODE 205.00 IS CODE = 62
 >>>> COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA <<<<<<

>>>> (STREET TABLE SECTION # 2 USED) <<<<<<
 UPSTREAM ELEVATION (FEET) = 781.20 DOWNSTREAM ELEVATION (FEET) = 769.80
 STREET LENGTH (FEET) = 336.00 CURB HEIGHT (INCHES) = 8.0
 STREET HALFWIDTH (FEET) = 32.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK (FEET) = 27.00
 INSIDE STREET CROSSFALL (DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL (DECIMAL) = 0.020
 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 Manning's FRICTION FACTOR for Streetflow section (curb-to-curb) = 0.0150

** TRAVEL TIME COMPUTED USING ESTIMATED FLOW (CFS) = 3.30
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH (FEET) = 0.32
 HALFSTREET FLOOD WIDTH (FEET) = 8.06
 AVERAGE FLOW VELOCITY (FEET/SEC.) = 3.93

PRODUCT OF DEPTH*VELOCITY (FT*FT/SEC.) = 1.26
 STREET FLOW TRAVEL TIME (MIN.) = 1.42 TC (MIN.) = 10.87
 * 100 YEAR RAINFALL INTENSITY (INCH/HR) = 3.966

SUBAREA LOSS RATE DATA (AMC III):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	CN	SCS
COMMERCIAL	C	0.25	0.25	0.100	86	
COMMERCIAL	D	0.18	0.20	0.100	91	
SUBAREA AVERAGE Pervious Loss Rate, Fp (INCH/HR) = 0.23						
SUBAREA AVERAGE Pervious Area Fraction, Ap = 0.100						
SUBAREA AREA (ACRES) = 0.43 SUBAREA RUNOFF (CFS) = 1.53						
EFFECTIVE AREA (ACRES) = 1.09 AREA-AVERAGED Fm (INCH/HR) = 0.02						
AREA-AVERAGED Fp (INCH/HR) = 0.21 AREA-AVERAGED Ap = 0.10						
TOTAL AREA (ACRES) = 1.1 PEAK FLOW RATE (CFS) = 3.87						

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH (FEET) = 0.33 HALFSTREET FLOOD WIDTH (FEET) = 8.77
 FLOW VELOCITY (FEET/SEC.) = 4.04 DEPTH*VELOCITY (FT*FT/SEC.) = 1.35
 LONGEST FLOWPATH FROM NODE 230.00 TO NODE 205.00 = 996.00 FEET.

 FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 1

>>>> DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE <<<<<<

>>>> AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES <<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION (MIN.) = 10.87
 RAINFALL INTENSITY (INCH/HR) = 3.97
 AREA-AVERAGED Fm (INCH/HR) = 0.02

Appendix B: Proposed Condition Hydrology

LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)

COMMERCIAL C 0.05 0.25 0.100 69 6.12

APARTMENTS C 0.15 0.25 0.200 69 6.52

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25

SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.175

SUBAREA RUNOFF(CFS) = 0.77

TOTAL AREA(ACRES) = 0.20 PEAK FLOW RATE(CFS) = 0.77

FLOW PROCESS FROM NODE 101.00 TO NODE 101.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 6.12

RAINFALL INTENSITY(INCH/HR) = 4.30

AREA-AVERAGED Fm(INCH/HR) = 0.04

AREA-AVERAGED Fp(INCH/HR) = 0.25

AREA-AVERAGED Ap = 0.17

EFFECTIVE STREAM AREA(ACRES) = 0.20

TOTAL STREAM AREA(ACRES) = 0.20

PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.77

FLOW PROCESS FROM NODE 102.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<

>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 136.00

ELEVATION DATA: UPSTREAM(FEET) = 789.00 DOWNSTREAM(FEET) = 787.08

Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20

SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 5.086

* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 4.778

SUBAREA Tc AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/	SCS SOIL	AREA	Fp	Ap	SCS	Tc
LAND USE	GROUP	(ACRES)	(INCH/HR)	(DECIMAL)	CN	(MIN.)
COMMERCIAL	C	0.04	0.25	0.100	69	5.09
APARTMENTS	C	0.15	0.25	0.200	69	5.42
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25						
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.179						
SUBAREA RUNOFF(CFS) = 0.81						
TOTAL AREA(ACRES) = 0.19 PEAK FLOW RATE(CFS) = 0.81						

FLOW PROCESS FROM NODE 101.00 TO NODE 101.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 5.09

RAINFALL INTENSITY(INCH/HR) = 4.78

AREA-AVERAGED Fm(INCH/HR) = 0.04

AREA-AVERAGED Fp(INCH/HR) = 0.25

AREA-AVERAGED Ap = 0.18

EFFECTIVE STREAM AREA(ACRES) = 0.19

TOTAL STREAM AREA(ACRES) = 0.19

PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.81

** CONFLUENCE DATA **

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

(Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)

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Ver. 18.0 Release Date: 07/01/2011 License ID 1264

Analysis prepared by:

RBF Consulting

***** DESCRIPTION OF STUDY *****

* Proposed Area A 25-year

FILE NAME: 8112PA25.DAT

TIME/DATE OF STUDY: 15:10 05/16/2012

=====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

--*TIME-OF-CONCENTRATION MODEL*--

=====

USER SPECIFIED STORM EVENT (YEAR) = 25.00

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS (DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

DATA BANK RAINFALL USED

ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*

HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING

NO.	(FT)	WIDTH	CROSSFALL	IN-	OUT-/PARK-	HEIGHT	WIDTH	LIP	HIKE	FACTOR
NO.	(FT)	SIDE	/ SIDE/ WAY	(FT)	(FT)	(ft)	(ft)	(ft)	(ft)	(n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0312	0.167	0.0150		
2	13.0	8.0	0.020/0.020/---	0.33	1.00	0.0312	0.125	0.0150		
3	32.0	27.0	0.020/0.020/---	0.67	2.00	0.0312	0.167	0.0150		

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-depth = 1.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<

>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 200.00

ELEVATION DATA: UPSTREAM(FEET) = 789.50 DOWNSTREAM(FEET) = 787.08

Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20

SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 6.120

* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 4.302

SUBAREA Tc AND LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/	SCS SOIL	AREA	Fp	Ap	SCS	Tc

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 6.21
RAINFALL INTENSITY(INCH/HR) = 4.27
AREA-AVERAGED Fm(INCH/HR) = 0.04
AREA-AVERAGED Fp(INCH/HR) = 0.21
AREA-AVERAGED Ap = 0.20
EFFECTIVE STREAM AREA(ACRES) = 0.18
TOTAL STREAM AREA(ACRES) = 0.18
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.68

** TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.50
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.27
HALFSTREET FLOOD WIDTH(FEET) = 6.86
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.70
PRODUCT OF DEPTH*VELOCITY(FT*FT/SEC.) = 0.74
STREET FLOW TRAVEL TIME(MIN.) = 1.45 Tc(MIN.) = 6.68
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 4.094
SUBAREA LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN
C 0.08 0.25 0.100 69
COMMERCIAL
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA AREA(ACRES) = 0.08 SUBAREA RUNOFF(CFS) = 0.29
EFFECTIVE AREA(ACRES) = 0.40 AREA-AVERAGED Fm(INCH/HR) = 0.04
AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.16
TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 1.47

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.27 HALFSTREET FLOOD WIDTH(FEET) = 6.77
FLOW VELOCITY(FEET/ SEC.) = 2.71 DEPTH*VELOCITY(FT*FT/ SEC.) = 0.74
LONGEST FLOWPATH FROM NODE 112.00 TO NODE 113.00 = 433.00 FEET.

FLOW PROCESS FROM NODE 113.00 TO NODE 113.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<
=====

MAINLINE Tc(MIN.) = 6.68
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 4.094
SUBAREA LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN
C 0.16 0.25 0.200 69
COMMERCIAL
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.200
SUBAREA AREA(ACRES) = 0.16 SUBAREA RUNOFF(CFS) = 0.58
EFFECTIVE AREA(ACRES) = 0.56 AREA-AVERAGED Fm(INCH/HR) = 0.04
AREA-AVERAGED Fp(INCH/HR) = 0.24 AREA-AVERAGED Ap = 0.17
TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 2.05

FLOW PROCESS FROM NODE 113.00 TO NODE 113.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 6.21
RAINFALL INTENSITY(INCH/HR) = 4.27
AREA-AVERAGED Fm(INCH/HR) = 0.04
AREA-AVERAGED Fp(INCH/HR) = 0.21
AREA-AVERAGED Ap = 0.20
EFFECTIVE STREAM AREA(ACRES) = 0.18
TOTAL STREAM AREA(ACRES) = 0.18
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.68

** CONFLUENCE DATA **
STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
1 1.22 5.23 4.703 0.25(0.04) 0.17 0.1 110.00
2 0.68 6.21 4.267 0.21(0.04) 0.20 0.2 112.00

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.
** PEAK FLOW RATE TABLE **
STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
1 1.22 5.23 4.703 0.23(0.04) 0.19 0.3 110.00
2 1.22 6.21 4.267 0.23(0.04) 0.19 0.3 112.00
COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 1.22 Tc(MIN.) = 5.23
EFFECTIVE AREA(ACRES) = 0.29 AREA-AVERAGED Fm(INCH/HR) = 0.04
AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.19
TOTAL AREA(ACRES) = 0.3
LONGEST FLOWPATH FROM NODE 112.00 TO NODE 111.00 = 198.00 FEET.

FLOW PROCESS FROM NODE 111.00 TO NODE 111.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<
=====

MAINLINE Tc(MIN.) = 5.23
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 4.703
SUBAREA LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN
C 0.03 0.25 0.100 69
COMMERCIAL
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA AREA(ACRES) = 0.03 SUBAREA RUNOFF(CFS) = 0.13
EFFECTIVE AREA(ACRES) = 0.32 AREA-AVERAGED Fm(INCH/HR) = 0.04
AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.18
TOTAL AREA(ACRES) = 0.3 PEAK FLOW RATE(CFS) = 1.35

FLOW PROCESS FROM NODE 111.00 TO NODE 113.00 IS CODE = 62
>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<<
>>>>>(STREET TABLE SECTION # 2 USED)<<<<<<
=====

UPSTREAM ELEVATION(FEET) = 787.60 DOWNSTREAM ELEVATION(FEET) = 782.29
STREET LENGTH(FEET) = 235.00 CURB HEIGHT(INCHES) = 4.0
STREET HALFWIDTH(FEET) = 13.00
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

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-----
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPE SIZE (NON-PRESSURE FLOW)<<<<<
-----
ELEVATION DATA: UPSTREAM (FEET) = 774.78 DOWNSTREAM (FEET) = 773.00
FLOW LENGTH (FEET) = 126.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER (INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.6 INCHES
PIPE-FLOW VELOCITY (FEET/SEC.) = 6.87
ESTIMATED PIPE DIAMETER (INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW (CFS) = 6.55
PIPE TRAVEL TIME (MIN.) = 0.31 Tc (MIN.) = 6.75
LONGEST FLOWPATH FROM NODE 112.00 TO NODE 105.00 = 876.00 FEET.
-----
FLOW PROCESS FROM NODE 105.00 TO NODE 105.00 IS CODE = 81
-----
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
-----
MAINLINE Tc (MIN.) = 6.75
* 25 YEAR RAINFALL INTENSITY (INCH/HR) = 4.072
SUBAREA LOSS RATE DATA (AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp (INCH/HR) (DECIMAL) CN SCS
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)
COMMERCIAL C 0.07 0.25 0.100 69
APARTMENTS C 0.28 0.25 0.200 69
RESIDENTIAL
"2 DWELLINGS/ACRE" C 0.11 0.25 0.700 69
SUBAREA AVERAGE PVIOUS LOSS RATE, Fp (INCH/HR) = 0.25
SUBAREA AVERAGE PVIOUS AREA FRACTION, Ap = 0.304
SUBAREA AREA (ACRES) = 0.46 SUBAREA RUNOFF (CFS) = 1.65
EFFECTIVE AREA (ACRES) = 2.23 AREA-AVERAGED Fm (INCH/HR) = 0.07
AREA-AVERAGED Fp (INCH/HR) = 0.25 AREA-AVERAGED Ap = 0.30
TOTAL AREA (ACRES) = 2.5 PEAK FLOW RATE (CFS) = 8.04
-----
FLOW PROCESS FROM NODE 105.00 TO NODE 106.00 IS CODE = 31
-----
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPE SIZE (NON-PRESSURE FLOW)<<<<<
-----
ELEVATION DATA: UPSTREAM (FEET) = 773.00 DOWNSTREAM (FEET) = 768.00
FLOW LENGTH (FEET) = 57.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER (INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.4 INCHES
PIPE-FLOW VELOCITY (FEET/SEC.) = 14.22
ESTIMATED PIPE DIAMETER (INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW (CFS) = 8.04
PIPE TRAVEL TIME (MIN.) = 0.07 Tc (MIN.) = 6.81
LONGEST FLOWPATH FROM NODE 112.00 TO NODE 106.00 = 933.00 FEET.
-----
FLOW PROCESS FROM NODE 106.00 TO NODE 106.00 IS CODE = 1
-----
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
-----
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION (MIN.) = 6.81
RAINFALL INTENSITY (INCH/HR) = 4.05
AREA-AVERAGED Fm (INCH/HR) = 0.07
AREA-AVERAGED Fp (INCH/HR) = 0.25
AREA-AVERAGED Ap = 0.30
EFFECTIVE STREAM AREA (ACRES) = 2.23
-----

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TOTAL STREAM AREA (ACRES) = 2.48
PEAK FLOW RATE (CFS) AT CONFLUENCE = 8.04
-----
FLOW PROCESS FROM NODE 140.00 TO NODE 141.00 IS CODE = 21
-----
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
>>>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
-----
INITIAL SUBAREA FLOW-LENGTH (FEET) = 330.00
ELEVATION DATA: UPSTREAM (FEET) = 790.80 DOWNSTREAM (FEET) = 785.80
-----
Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20
SUBAREA ANALYSIS USED MINIMUM Tc (MIN.) = 7.148
* 25 YEAR RAINFALL INTENSITY (INCH/HR) = 3.940
SUBAREA Tc AND LOSS RATE DATA (AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp (INCH/HR) (DECIMAL) CN SCS
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)
COMMERCIAL C 0.28 0.25 0.100 69
COMMERCIAL D 0.04 0.20 0.100 75
SUBAREA AVERAGE PVIOUS LOSS RATE, Fp (INCH/HR) = 0.24
SUBAREA AVERAGE PVIOUS AREA FRACTION, Ap = 0.100
SUBAREA RUNOFF (CFS) = 1.13
TOTAL AREA (ACRES) = 0.32 PEAK FLOW RATE (CFS) = 1.13
-----
FLOW PROCESS FROM NODE 141.00 TO NODE 142.00 IS CODE = 62
-----
>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 3 USED)<<<<<
-----
UPSTREAM ELEVATION (FEET) = 785.80 DOWNSTREAM ELEVATION (FEET) = 776.60
STREET LENGTH (FEET) = 300.00 CURB HEIGHT (INCHES) = 8.0
STREET HALFWIDTH (FEET) = 32.00
-----
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK (FEET) = 27.00
INSIDE STREET CROSSFALL (DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL (DECIMAL) = 0.020
-----
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
Manning's FRICTION FACTOR for Streetflow Section (curb-to-curb) = 0.0150
-----
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW (CFS) = 1.60
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH (FEET) = 0.27
HALFSTREET FLOOD WIDTH (FEET) = 5.37
AVERAGE FLOW VELOCITY (FEET/SEC.) = 3.35
PRODUCT OF DEPTH*VELOCITY (FT*FT/SEC.) = 0.89
STREET FLOW TRAVEL TIME (MIN.) = 1.49 Tc (MIN.) = 8.64
* 25 YEAR RAINFALL INTENSITY (INCH/HR) = 3.540
SUBAREA LOSS RATE DATA (AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp (INCH/HR) (DECIMAL) CN SCS
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)
COMMERCIAL C 0.29 0.25 0.100 69
COMMERCIAL B 0.01 0.30 0.100 56
SUBAREA AVERAGE PVIOUS LOSS RATE, Fp (INCH/HR) = 0.25
SUBAREA AVERAGE PVIOUS AREA FRACTION, Ap = 0.100
SUBAREA AREA (ACRES) = 0.30 SUBAREA RUNOFF (CFS) = 0.95
EFFECTIVE AREA (ACRES) = 0.62 AREA-AVERAGED Fm (INCH/HR) = 0.02
AREA-AVERAGED Fp (INCH/HR) = 0.25 AREA-AVERAGED Ap = 0.10
TOTAL AREA (ACRES) = 0.6 PEAK FLOW RATE (CFS) = 1.96
-----
END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH (FEET) = 0.28 HALFSTREET FLOOD WIDTH (FEET) = 6.19

```


LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)

COMMERCIAL C 0.05 0.25 0.100 86 6.12

APARTMENTS C 0.15 0.25 0.200 86 6.52

SUBAREA AVERAGE PVIOUS LOSS RATE, Fp(INCH/HR) = 0.25

SUBAREA AVERAGE PVIOUS AREA FRACTION, Ap = 0.175

SUBAREA RUNOFF (CFS) = 0.98

TOTAL AREA(ACRES) = 0.20 PEAK FLOW RATE (CFS) = 0.98

FLOW PROCESS FROM NODE 101.00 TO NODE 101.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 6.12

RAINFALL INTENSITY(INCH/HR) = 5.51

AREA-AVERAGED Fp(INCH/HR) = 0.04

AREA-AVERAGED Fp(INCH/HR) = 0.25

AREA-AVERAGED Ap = 0.17

EFFECTIVE STREAM AREA(ACRES) = 0.20

TOTAL STREAM AREA(ACRES) = 0.20

PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.98

FLOW PROCESS FROM NODE 102.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<

>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 136.00

ELEVATION DATA: UPSTREAM(FEET) = 789.00 DOWNSTREAM(FEET) = 787.08

Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20

SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 5.086

* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 6.127

SUBAREA Tc AND LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/	SCS SOIL	AREA	Fp	Ap	SCS	Tc
LAND USE	GROUP	(ACRES)	(INCH/HR)	(DECIMAL)	CN	(MIN.)
COMMERCIAL	C	0.04	0.25	0.100	86	5.09
APARTMENTS	C	0.15	0.25	0.200	86	5.42

SUBAREA AVERAGE PVIOUS LOSS RATE, Fp(INCH/HR) = 0.25

SUBAREA RUNOFF(CFS) = 1.04

TOTAL AREA(ACRES) = 0.19 PEAK FLOW RATE(CFS) = 1.04

FLOW PROCESS FROM NODE 101.00 TO NODE 101.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 5.09

RAINFALL INTENSITY(INCH/HR) = 6.13

AREA-AVERAGED Fp(INCH/HR) = 0.04

AREA-AVERAGED Fp(INCH/HR) = 0.25

AREA-AVERAGED Ap = 0.18

EFFECTIVE STREAM AREA(ACRES) = 0.19

TOTAL STREAM AREA(ACRES) = 0.19

PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.04

** CONFLUENCE DATA **

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

(Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)

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Ver. 18.0 Release Date: 07/01/2011 License ID 1264

Analysis prepared by:

RBF Consulting

***** DESCRIPTION OF STUDY *****

* Proposed Area A 100-year

FILE NAME: 8112PA00.DAT

TIME/DATE OF STUDY: 15:11 05/16/2012

=====

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

---*TIME-OF-CONCENTRATION MODEL*---

=====

USER SPECIFIED STORM EVENT (YEAR) = 100.00

SPECIFIED MINIMUM PIPE SIZE (INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

DATA BANK RAINFALL USED

ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING

WIDTH	CROSSFALL	IN- / OUT-/PARK-	HEIGHT	WIDTH	LIP	HIKE	FACTOR
NO.	(FT)	(FT)	(FT)	(FT)	(FT)	(ft)	(n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0312	0.167 0.0150
2	13.0	8.0	0.020/0.020/ ---	0.33	1.00	0.0312	0.125 0.0150
3	32.0	27.0	0.020/0.020/ ---	0.67	2.00	0.0312	0.167 0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 1.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<

>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<

=====

INITIAL SUBAREA FLOW-LENGTH(FEET) = 200.00

ELEVATION DATA: UPSTREAM(FEET) = 789.50 DOWNSTREAM(FEET) = 787.08

Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20

SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 6.120

* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 5.511

SUBAREA Tc AND LOSS RATE DATA(AMC III):

DEVELOPMENT TYPE/	SCS SOIL	AREA	Fp	Ap	SCS	Tc
LAND USE	GROUP	(ACRES)	(INCH/HR)	(DECIMAL)	CN	(MIN.)
COMMERCIAL	C	0.05	0.25	0.100	86	6.12
APARTMENTS	C	0.15	0.25	0.200	86	6.52

SUBAREA AVERAGE PVIOUS LOSS RATE, Fp(INCH/HR) = 0.25

SUBAREA RUNOFF(CFS) = 1.04

TOTAL AREA(ACRES) = 0.19 PEAK FLOW RATE(CFS) = 1.04


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*****
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<<
>>>>USING COMPUTER-ESTIMATED PIPE SIZE (NON-PRESSURE FLOW)<<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 773.00
FLOW LENGTH(FEET) = 126.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.29
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.51
PIPE TRAVEL TIME(MIN.) = 0.29 Tc(MIN.) = 6.64
LONGEST FLOWPATH FROM NODE 112.00 TO NODE 105.00 = 876.00 FEET.
*****

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*****
FLOW PROCESS FROM NODE 105.00 TO NODE 105.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<
=====
MAINLINE Tc(MIN.) = 6.64
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 5.261
SUBAREA LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp SCS
LAND USE (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.07 0.25 0.100 86
APARTMENTS C 0.28 0.25 0.200 86
RESIDENTIAL C 0.11 0.25 0.700 86
"2 DWELLINGS/ACRE"
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.304
SUBAREA AREA(ACRES) = 0.46 SUBAREA RUNOFF(CFS) = 2.15
EFFECTIVE AREA(ACRES) = 2.24 AREA-AVERAGED Fm(INCH/HR) = 0.07
AREA-AVERAGED Fp(INCH/HR) = 0.25 AREA-AVERAGED Ap = 0.30
TOTAL AREA(ACRES) = 2.5 PEAK FLOW RATE(CFS) = 10.44
*****

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*****
FLOW PROCESS FROM NODE 105.00 TO NODE 106.00 IS CODE = 31
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<<
>>>>USING COMPUTER-ESTIMATED PIPE SIZE (NON-PRESSURE FLOW)<<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 773.00 DOWNSTREAM(FEET) = 768.00
FLOW LENGTH(FEET) = 57.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 15.27
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 10.44
PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 6.70
LONGEST FLOWPATH FROM NODE 112.00 TO NODE 106.00 = 933.00 FEET.
*****

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*****
FLOW PROCESS FROM NODE 106.00 TO NODE 106.00 IS CODE = 1
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 6.70
RAINFALL INTENSITY(INCH/HR) = 5.23
AREA-AVERAGED Fm(INCH/HR) = 0.07
AREA-AVERAGED Fp(INCH/HR) = 0.25
AREA-AVERAGED Ap = 0.30
EFFECTIVE STREAM AREA(ACRES) = 2.24
TOTAL STREAM AREA(ACRES) = 2.48
*****

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*****
PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.44
FLOW PROCESS FROM NODE 140.00 TO NODE 141.00 IS CODE = 21
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<
>>>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
=====
INITIAL SUBAREA FLOW-LENGTH(FEET) = 330.00
ELEVATION DATA: UPSTREAM(FEET) = 790.80 DOWNSTREAM(FEET) = 785.80
Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20
SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 7.148
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 5.042
SUBAREA Tc AND LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp SCS
LAND USE (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.28 0.25 0.100 86
D 0.04 0.20 0.100 91
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.24
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA RUNOFF(CFS) = 1.44
TOTAL AREA(ACRES) = 0.32 PEAK FLOW RATE(CFS) = 1.44
*****

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*****
FLOW PROCESS FROM NODE 141.00 TO NODE 142.00 IS CODE = 62
>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<<
>>>>(STREET TABLE SECTION # 3 USED)<<<<<<
=====
UPSTREAM ELEVATION(FEET) = 785.80 DOWNSTREAM ELEVATION(FEET) = 776.60
STREET LENGTH(FEET) = 300.00 CURB HEIGHT(INCHES) = 8.0
STREET HALFWIDTH(FEET) = 32.00
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 27.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
SPECIFIED NUMBER OF HALfstREETS CARRYING RUNOFF = 1
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
*****

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*****
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.05
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.29
HALFSTREET FLOOD WIDTH(FEET) = 6.37
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.45
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.99
STREET FLOW TRAVEL TIME(MIN.) = 1.45 Tc(MIN.) = 8.60
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 4.536
SUBAREA LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp SCS
LAND USE (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.29 0.25 0.100 86
B 0.01 0.30 0.100 76
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA AREA(ACRES) = 0.30 SUBAREA RUNOFF(CFS) = 1.22
EFFECTIVE AREA(ACRES) = 0.62 AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.25 AREA-AVERAGED Ap = 0.10
TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 2.52
*****

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*****
END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 7.19
FLOW VELOCITY(FEET/SEC.) = 3.57 DEPTH*VELOCITY(FT*FT/SEC.) = 1.08
*****

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LAND USE
GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)
APARTMENTS D 0.15 0.20 0.200 75 6.51
COMMERCIAL D 0.05 0.20 0.100 75 6.11
SUBAREA AVERAGE PVIOUS LOSS RATE, Fp(INCH/HR) = 0.20
SUBAREA AVERAGE PVIOUS AREA FRACTION, Ap = 0.175
SUBAREA RUNOFF(CFS) = 0.77
TOTAL AREA(ACRES) = 0.20 PEAK FLOW RATE(CFS) = 0.77

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*****
FLOW PROCESS FROM NODE 201.00 TO NODE 201.00 IS CODE = 1
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 6.11
RAINFALL INTENSITY(INCH/HR) = 4.31
AREA-AVERAGED Fm(INCH/HR) = 0.04
AREA-AVERAGED Fp(INCH/HR) = 0.20
AREA-AVERAGED Ap = 0.17
EFFECTIVE STREAM AREA(ACRES) = 0.20
TOTAL STREAM AREA(ACRES) = 0.20
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.77

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*****
FLOW PROCESS FROM NODE 202.00 TO NODE 201.00 IS CODE = 21
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<
>>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
=====
INITIAL SUBAREA FLOW-LENGTH(FEET) = 158.00
ELEVATION DATA: UPSTREAM(FEET) = 788.50 DOWNSTREAM(FEET) = 787.00

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Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20
SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 5.846
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 4.415
SUBAREA Tc AND LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp (INCH/HR) Ap SCS Tc
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)
APARTMENTS D 0.14 0.20 0.200 75 6.23
COMMERCIAL D 0.05 0.20 0.100 75 5.85
SUBAREA AVERAGE PVIOUS LOSS RATE, Fp(INCH/HR) = 0.20
SUBAREA AVERAGE PVIOUS AREA FRACTION, Ap = 0.174
SUBAREA RUNOFF(CFS) = 0.75
TOTAL AREA(ACRES) = 0.19 PEAK FLOW RATE(CFS) = 0.75

```

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*****
FLOW PROCESS FROM NODE 201.00 TO NODE 201.00 IS CODE = 1
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 5.85
RAINFALL INTENSITY(INCH/HR) = 4.42
AREA-AVERAGED Fm(INCH/HR) = 0.03
AREA-AVERAGED Fp(INCH/HR) = 0.20
AREA-AVERAGED Ap = 0.17
EFFECTIVE STREAM AREA(ACRES) = 0.19
TOTAL STREAM AREA(ACRES) = 0.19
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.75

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** CONFLUENCE DATA **

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*****
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Analysis prepared by:
RBF Consulting

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*****
* Proposed Area N 25-Year
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*****
DESCRIPTION OF STUDY *****
FILE NAME: 8112PN25.DAT
TIME/DATE OF STUDY: 15:12 05/16/2012

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*****
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
-----
--*TIME-OF-CONCENTRATION MODEL*--

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*****
USER SPECIFIED STORM EVENT(YEAR) = 25.00
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
*DATA BANK RAINFALL USED*
*ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

```

```

*****
*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING
WIDTH CROSSFALL IN- / OUT-/PARK- HEIGHT WIDTH LIP HIKE FACTOR
NO. (FT) (FT) SIDE / SIDE/ WAY (FT) (FT) (n)
=====
1 30.0 20.0 0.018/0.018/0.020 0.67 2.00 0.0312 0.167 0.0150
2 32.0 27.0 0.020/0.020/ --- 0.67 2.00 0.0312 0.167 0.0150
3 13.0 8.0 0.020/0.020/ --- 0.33 1.00 0.0312 0.125 0.0150

```

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GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
1. Relative Flow-depth = 1.00 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)
*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

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*****
FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<
>>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
=====
INITIAL SUBAREA FLOW-LENGTH(FEET) = 196.00
ELEVATION DATA: UPSTREAM(FEET) = 789.30 DOWNSTREAM(FEET) = 787.00

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```

Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20
SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 6.108
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 4.307
SUBAREA Tc AND LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS Tc

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NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE (CFS) = 8.26 Tc(MIN.) = 7.39
AREA-AVERAGED Fp(INCH/HR) = 0.06 AREA-AVERAGED Fp(INCH/HR) = 0.21
AREA-AVERAGED Ap = 0.27 EFFECTIVE AREA(ACRES) = 2.41
*****
FLOW PROCESS FROM NODE 204.00 TO NODE 205.00 IS CODE = 31
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
ELEVATION DATA: UPSTREAM(FEET) = 774.58 DOWNSTREAM(FEET) = 774.39
FLOW LENGTH(FEET) = 81.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 3.67
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.26
PIPE TRAVEL TIME(MIN.) = 0.37 Tc(MIN.) = 7.76
LONGEST FLOWPATH FROM NODE 212.00 TO NODE 205.00 = 790.00 FEET.
*****
FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
*****
MAINLINE Tc(MIN.) = 7.76
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.761
SUBAREA LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (INCH/HR) (DECIMAL) CN
PUBLIC PARK D 0.10 0.20 0.850 75
COMMERCIAL D 0.09 0.20 0.100 75
RESIDENTIAL D 0.01 0.20 0.500 75
"5-7 DWELLINGS/ACRE"
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.20
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.495
SUBAREA AREA(ACRES) = 0.20 SUBAREA RUNOFF(CFS) = 0.66
EFFECTIVE AREA(ACRES) = 2.61 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.21 AREA-AVERAGED Ap = 0.29
TOTAL AREA(ACRES) = 2.7 PEAK FLOW RATE(CFS) = 8.70
*****
FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
*****
MAINLINE Tc(MIN.) = 7.76
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.761
SUBAREA LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (INCH/HR) (DECIMAL) CN
PUBLIC PARK C 0.02 0.25 0.850 69
COMMERCIAL C 0.18 0.25 0.100 69
RESIDENTIAL C 0.03 0.25 0.500 69
"5-7 DWELLINGS/ACRE"
APARTMENTS C 0.28 0.25 0.200 69
RESIDENTIAL C 0.17 0.25 0.700 69
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.331
SUBAREA AREA(ACRES) = 0.68 SUBAREA RUNOFF(CFS) = 2.25
EFFECTIVE AREA(ACRES) = 3.29 AREA-AVERAGED Fm(INCH/HR) = 0.07
AREA-AVERAGED Fp(INCH/HR) = 0.22 AREA-AVERAGED Ap = 0.30
TOTAL AREA(ACRES) = 3.3 PEAK FLOW RATE(CFS) = 10.95
*****

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*****
FLOW PROCESS FROM NODE 205.00 TO NODE 206.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
*****
MAINLINE Tc(MIN.) = 8.11
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.668
SUBAREA LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.09 0.25 0.100 69
APARTMENTS C 0.06 0.25 0.200 69
APARTMENTS D 0.01 0.20 0.200 75
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.144
SUBAREA AREA(ACRES) = 0.16 SUBAREA RUNOFF(CFS) = 0.52
EFFECTIVE AREA(ACRES) = 3.45 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.22 AREA-AVERAGED Ap = 0.29
TOTAL AREA(ACRES) = 3.5 PEAK FLOW RATE(CFS) = 11.20
*****
FLOW PROCESS FROM NODE 206.00 TO NODE 207.00 IS CODE = 31
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
ELEVATION DATA: UPSTREAM(FEET) = 772.21 DOWNSTREAM(FEET) = 769.00
FLOW LENGTH(FEET) = 220.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.74
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 11.20
PIPE TRAVEL TIME(MIN.) = 0.47 Tc(MIN.) = 8.59
LONGEST FLOWPATH FROM NODE 212.00 TO NODE 207.00 = 1091.00 FEET.
*****
FLOW PROCESS FROM NODE 207.00 TO NODE 207.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
*****
MAINLINE Tc(MIN.) = 8.59
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.552
SUBAREA LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.19 0.25 0.100 69
APARTMENTS C 0.38 0.25 0.200 69
RESIDENTIAL C 0.25 0.25 0.200 69
*****

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*****
FLOW PROCESS FROM NODE 207.00 TO NODE 207.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
*****
MAINLINE Tc(MIN.) = 8.59
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.552
SUBAREA LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.19 0.25 0.100 69
APARTMENTS C 0.38 0.25 0.200 69
RESIDENTIAL C 0.25 0.25 0.200 69
*****

```

```

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
MAINLINE Tc(MIN.) = 8.65
* 25 YEAR RAINFALL INTENSITY(INCH/HR) = 3.536
SUBAREA LOSS RATE DATA(AMC II):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.46 0.25 0.100 69
COMMERCIAL D 0.01 0.20 0.100 75
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA AREA(ACRES) = 0.47 SUBAREA RUNOFF(CFS) = 1.49
EFFECTIVE AREA(ACRES) = 5.53 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.25
TOTAL AREA(ACRES) = 5.8 PEAK FLOW RATE(CFS) = 17.32
=====
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 5.8 Tc(MIN.) = 8.65
EFFECTIVE AREA(ACRES) = 5.53 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.254
PEAK FLOW RATE(CFS) = 17.32
=====

```

```

** PEAK FLOW RATE TABLE **
STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
1 17.32 8.65 3.536 0.23( 0.06) 0.25 5.5 202.00
2 17.27 8.78 3.507 0.23( 0.06) 0.25 5.6 210.00
3 17.18 8.92 3.476 0.23( 0.06) 0.25 5.6 200.00
4 16.73 9.58 3.338 0.23( 0.06) 0.25 5.7 212.00
5 15.78 11.05 3.080 0.23( 0.06) 0.25 5.8 270.00
=====

```

END OF RATIONAL METHOD ANALYSIS

```

DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.20 0.25 0.100 69
COMMERCIAL D 0.17 0.20 0.100 75
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.23
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA AREA(ACRES) = 0.37 SUBAREA RUNOFF(CFS) = 1.02
EFFECTIVE AREA(ACRES) = 1.01 AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.21 AREA-AVERAGED Ap = 0.10
TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 2.78
=====
END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.31 HALFCREST FLOOD WIDTH(FEET) = 7.36
FLOW VELOCITY(FEET/SEC.) = 3.80 DEPTH*VELOCITY(FT*FT/SEC.) = 1.16
LONGEST FLOWPATH FROM NODE 208.00 TO NODE 208.00 = 996.00 FEET.
=====

```

```

*****
FLOW PROCESS FROM NODE 208.00 TO NODE 208.00 IS CODE = 1
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 11.05
RAINFALL INTENSITY(INCH/HR) = 3.08
AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.21
EFFECTIVE STREAM AREA(ACRES) = 1.01
TOTAL STREAM AREA(ACRES) = 1.01
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.78
=====

```

```

** CONFLUENCE DATA **
STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
1 13.40 8.65 3.536 0.23( 0.07) 0.30 4.3 202.00
1 13.34 8.78 3.507 0.23( 0.07) 0.30 4.3 210.00
1 13.25 8.92 3.476 0.23( 0.07) 0.30 4.3 200.00
1 12.77 9.58 3.338 0.23( 0.07) 0.30 4.3 212.00
2 2.78 11.05 3.080 0.23( 0.02) 0.10 1.0 270.00
=====

```

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO CONFLUENCE FORMULA USED FOR 2 STREAMS.

```

** PEAK FLOW RATE TABLE **
STREAM Q Tc Intensity Fp(Fm) Ap Ae HEADWATER
NUMBER (CFS) (MIN.) (INCH/HR) (INCH/HR) (ACRES) NODE
1 15.90 8.65 3.536 0.23( 0.06) 0.27 5.1 202.00
2 15.86 8.78 3.507 0.23( 0.06) 0.27 5.1 210.00
3 15.78 8.92 3.476 0.23( 0.06) 0.27 5.1 200.00
4 15.38 9.58 3.338 0.23( 0.06) 0.26 5.2 212.00
5 14.54 11.05 3.080 0.23( 0.06) 0.26 5.3 270.00
=====

```

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```

PEAK FLOW RATE(CFS) = 15.90 Tc(MIN.) = 8.65
EFFECTIVE AREA(ACRES) = 5.06 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.27
TOTAL AREA(ACRES) = 5.3
LONGEST FLOWPATH FROM NODE 212.00 TO NODE 208.00 = 1166.00 FEET.
=====
FLOW PROCESS FROM NODE 208.00 TO NODE 208.00 IS CODE = 81
=====

```

```

LAND USE
APARTMENTS D 0.15 0.20 0.200 91 6.51
COMMERCIAL D 0.05 0.20 0.100 91 6.11
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.20
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.175
SUBAREA RUNOFF(CFS) = 0.99
TOTAL AREA(ACRES) = 0.20 PEAK FLOW RATE(CFS) = 0.99

```

```

*****
FLOW PROCESS FROM NODE 201.00 TO NODE 201.00 IS CODE = 1
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<
=====

```

```

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 6.11
RAINFALL INTENSITY(INCH/HR) = 5.52
AREA-AVERAGED Fp(INCH/HR) = 0.04
AREA-AVERAGED Fp(INCH/HR) = 0.20
AREA-AVERAGED Ap = 0.17
EFFECTIVE STREAM AREA(ACRES) = 0.20
TOTAL STREAM AREA(ACRES) = 0.20
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.99

```

```

*****
FLOW PROCESS FROM NODE 202.00 TO NODE 201.00 IS CODE = 21
=====

```

```

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<
>>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
=====

```

```

INITIAL SUBAREA FLOW-LENGTH(FEET) = 158.00
ELEVATION DATA: UPSTREAM(FEET) = 788.50 DOWNSTREAM(FEET) = 787.00

```

```

Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20
SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 5.846
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 5.657
SUBAREA Tc AND LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS Tc
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN (MIN.)
APARTMENTS D 0.14 0.20 0.200 91 6.23
COMMERCIAL D 0.05 0.20 0.100 91 5.85
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.20
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.174
SUBAREA RUNOFF(CFS) = 0.96
TOTAL AREA(ACRES) = 0.19 PEAK FLOW RATE(CFS) = 0.96

```

```

*****
FLOW PROCESS FROM NODE 201.00 TO NODE 201.00 IS CODE = 1
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<<
=====

```

```

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 5.85
RAINFALL INTENSITY(INCH/HR) = 5.66
AREA-AVERAGED Fp(INCH/HR) = 0.03
AREA-AVERAGED Fp(INCH/HR) = 0.20
AREA-AVERAGED Ap = 0.17
EFFECTIVE STREAM AREA(ACRES) = 0.19
TOTAL STREAM AREA(ACRES) = 0.19
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.96

```

```

** CONFLUENCE DATA **

```

```

*****
RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
(Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
(c) Copyright 1983-2011 Advanced Engineering Software (aes)
Ver. 18.0 Release Date: 07/01/2011 License ID 1264

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Analysis prepared by:
RBF Consulting

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*****
Proposed Area N 100-year
*****
DESCRIPTION OF STUDY *****

```

```

*****
FILE NAME: 8112PN00.DAT
TIME/DATE OF STUDY: 15:13 05/16/2012

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=====
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
-----

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--*TIME-OF-CONCENTRATION MODEL*--

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```

USER SPECIFIED STORM EVENT(YEAR) = 100.00
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
*DATA BANK RAINFALL USED*
*ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

```

```

*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING
WIDTH CROSSFALL IN- / OUT-/PARK- HEIGHT WIDTH LIP HIKE FACTOR
NO. (FT) (FT) SIDE / SIDE/ WAY (FT) (FT) (h)
=====
1 30.0 20.0 0.018/0.018/0.020 0.67 2.00 0.0312 0.167 0.0150
2 32.0 27.0 0.020/0.020/ --- 0.67 2.00 0.0312 0.167 0.0150
3 13.0 8.0 0.020/0.020/ --- 0.33 1.00 0.0312 0.125 0.0150

```

```

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
1. Relative Flow-Depth = 1.00 FEET
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)
*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
*USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

```

```

*****
FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21
=====

```

```

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<<
>>>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
=====

```

```

INITIAL SUBAREA FLOW-LENGTH(FEET) = 196.00
ELEVATION DATA: UPSTREAM(FEET) = 789.30 DOWNSTREAM(FEET) = 787.00

```

```

Tc = K*((LENGTH** 3.00)/(ELEVATION CHANGE))**0.20
SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) = 6.108
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 5.517
SUBAREA Tc AND LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS Tc

```



```

PEAK FLOW RATE(CFS) = 10.71 Tc(MIN.) = 7.29
AREA-AVERAGED Fm(INCH/HR) = 0.06 AREA-AVERAGED Fp(INCH/HR) = 0.21
AREA-AVERAGED Ap = 0.27 EFFECTIVE AREA(ACRES) = 2.42

*****
FLOW PROCESS FROM NODE 204.00 TO NODE 205.00 IS CODE = 31
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<<
>>>>USING COMPUTER-ESTIMATED PIPE SIZE (NON-PRESSURE FLOW)
ELEVATION DATA: UPSTREAM(FEET) = 774.58 DOWNSTREAM(FEET) = 774.39
FLOW LENGTH(FEET) = 81.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 3.93
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 10.71
PIPE TRAVEL TIME(MIN.) = 0.34 Tc(MIN.) = 7.64
LONGEST FLOWPATH FROM NODE 212.00 TO NODE 205.00 = 790.00 FEET.
*****
FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<
=====
MAINLINE Tc(MIN.) = 7.64
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 4.854
SUBAREA LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (ACRES) (INCH/HR) (DECIMAL) CN
PUBLIC PARK D 0.10 0.20 0.850 91
COMMERCIAL D 0.09 0.20 0.100 91
RESIDENTIAL D 0.01 0.20 0.500 91
"5-7 DWELLINGS/ACRE"
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.20
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.495
SUBAREA AREA(ACRES) = 0.20 SUBAREA RUNOFF(CFS) = 0.86
EFFECTIVE AREA(ACRES) = 2.62 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.21 AREA-AVERAGED Ap = 0.29
TOTAL AREA(ACRES) = 2.7 PEAK FLOW RATE(CFS) = 11.28
*****
FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<
=====
MAINLINE Tc(MIN.) = 7.64
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 4.854
SUBAREA LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (ACRES) (INCH/HR) (DECIMAL) CN
PUBLIC PARK C 0.02 0.25 0.850 86
COMMERCIAL C 0.18 0.25 0.100 86
RESIDENTIAL C 0.03 0.25 0.500 86
"5-7 DWELLINGS/ACRE" C 0.28 0.25 0.200 86
APARTMENTS C 0.17 0.25 0.700 86
"2 DWELLINGS/ACRE"
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.331
SUBAREA AREA(ACRES) = 0.68 SUBAREA RUNOFF(CFS) = 2.92
EFFECTIVE AREA(ACRES) = 3.30 AREA-AVERAGED Fm(INCH/HR) = 0.07
AREA-AVERAGED Fp(INCH/HR) = 0.22 AREA-AVERAGED Ap = 0.30
TOTAL AREA(ACRES) = 3.3 PEAK FLOW RATE(CFS) = 14.20

```

```

*****
FLOW PROCESS FROM NODE 205.00 TO NODE 206.00 IS CODE = 31
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<<
>>>>USING COMPUTER-ESTIMATED PIPE SIZE (NON-PRESSURE FLOW)
ELEVATION DATA: UPSTREAM(FEET) = 773.39 DOWNSTREAM(FEET) = 773.21
FLOW LENGTH(FEET) = 81.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 19.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.13
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 14.20
PIPE TRAVEL TIME(MIN.) = 0.33 Tc(MIN.) = 7.96
LONGEST FLOWPATH FROM NODE 212.00 TO NODE 206.00 = 871.00 FEET.
*****
FLOW PROCESS FROM NODE 206.00 TO NODE 206.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<
=====
MAINLINE Tc(MIN.) = 7.96
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 4.739
SUBAREA LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.09 0.25 0.100 86
APARTMENTS C 0.06 0.25 0.200 86
APARTMENTS D 0.01 0.20 0.200 91
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.144
SUBAREA AREA(ACRES) = 0.16 SUBAREA RUNOFF(CFS) = 0.68
EFFECTIVE AREA(ACRES) = 3.46 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.22 AREA-AVERAGED Ap = 0.29
TOTAL AREA(ACRES) = 3.5 PEAK FLOW RATE(CFS) = 14.54
*****
FLOW PROCESS FROM NODE 206.00 TO NODE 207.00 IS CODE = 31
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<<
>>>>USING COMPUTER-ESTIMATED PIPE SIZE (NON-PRESSURE FLOW)
ELEVATION DATA: UPSTREAM(FEET) = 772.21 DOWNSTREAM(FEET) = 769.00
FLOW LENGTH(FEET) = 220.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.39
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 14.54
PIPE TRAVEL TIME(MIN.) = 0.44 Tc(MIN.) = 8.40
LONGEST FLOWPATH FROM NODE 212.00 TO NODE 207.00 = 1091.00 FEET.
*****
FLOW PROCESS FROM NODE 207.00 TO NODE 207.00 IS CODE = 81
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<
=====
MAINLINE Tc(MIN.) = 8.40
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 4.596
SUBAREA LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.19 0.25 0.100 86
APARTMENTS C 0.38 0.25 0.200 86
RESIDENTIAL C 0.25 0.25 0.700 86
"2 DWELLINGS/ACRE"

```

```

=====
MAINLINE TC(MIN.) = 8.47
* 100 YEAR RAINFALL INTENSITY(INCH/HR) = 4.576
SUBAREA LOSS RATE DATA(AMC III):
DEVELOPMENT TYPE/ SCS SOIL AREA Fp Ap SCS
LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.46 0.25 0.100 86
COMMERCIAL D 0.01 0.20 0.100 91
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.25
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA AVERAGE PERVIOUS RUNOFF(CFS) = 1.93
EFFECTIVE AREA(ACRES) = 5.53 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.25
TOTAL AREA(ACRES) = 5.8 PEAK FLOW RATE(CFS) = 22.50
=====
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 5.8 TC(MIN.) = 8.47
EFFECTIVE AREA(ACRES) = 5.53 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.254
PEAK FLOW RATE(CFS) = 22.50
=====
** PEAK FLOW RATE TABLE **

```

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp (Fm) (INCH/HR)	Ap (ACRES)	Ae (ACRES)	HEADWATER NODE
1	22.50	8.47	4.576	0.23(0.06)	0.25	5.5	202.00
2	22.45	8.56	4.548	0.23(0.06)	0.25	5.6	210.00
3	22.29	8.73	4.494	0.23(0.06)	0.25	5.6	200.00
4	21.69	9.38	4.314	0.23(0.06)	0.25	5.7	212.00
5	20.40	10.88	3.964	0.23(0.06)	0.25	5.8	270.00

```

=====
END OF RATIONAL METHOD ANALYSIS
=====

```

```

LAND USE GROUP (ACRES) (INCH/HR) (DECIMAL) CN
COMMERCIAL C 0.20 0.25 0.100 86
COMMERCIAL D 0.17 0.20 0.100 91
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.23
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.100
SUBAREA AVERAGE PERVIOUS RUNOFF(CFS) = 1.31
EFFECTIVE AREA(ACRES) = 0.37 AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.21 AREA-AVERAGED Ap = 0.10
TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 3.58
=====
END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.33 HALFSREET FLOOD WIDTH(FEET) = 8.42
FLOW VELOCITY(FEET/SEC.) = 3.99 DEPTH*VELOCITY(FT*FV/SEC.) = 1.30
LONGEST FLOWPATH FROM NODE 270.00 TO NODE 208.00 = 996.00 FEET.
=====
** CONFLUENCE DATA **
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.88
RAINFALL INTENSITY(INCH/HR) = 3.96
AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.21
AREA-AVERAGED Ap = 0.10
EFFECTIVE STREAM AREA(ACRES) = 1.01
TOTAL STREAM AREA(ACRES) = 1.01
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.58
=====
** CONFLUENCE DATA **
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.88
RAINFALL INTENSITY(INCH/HR) = 3.96
AREA-AVERAGED Fm(INCH/HR) = 0.02
AREA-AVERAGED Fp(INCH/HR) = 0.21
AREA-AVERAGED Ap = 0.10
EFFECTIVE STREAM AREA(ACRES) = 1.01
TOTAL STREAM AREA(ACRES) = 1.01
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.58
=====

```

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp (Fm) (INCH/HR)	Ap (ACRES)	Ae (ACRES)	HEADWATER NODE
1	17.43	8.47	4.576	0.23(0.07)	0.30	4.3	202.00
1	17.37	8.56	4.548	0.23(0.07)	0.30	4.3	210.00
1	17.21	8.73	4.494	0.23(0.07)	0.30	4.3	200.00
1	16.58	9.38	4.314	0.23(0.07)	0.30	4.3	212.00
2	3.58	10.88	3.964	0.21(0.02)	0.10	1.0	270.00

```

=====
RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.
=====
** PEAK FLOW RATE TABLE **

```

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp (Fm) (INCH/HR)	Ap (ACRES)	Ae (ACRES)	HEADWATER NODE
1	20.65	8.47	4.576	0.23(0.06)	0.27	5.1	202.00
2	20.61	8.56	4.548	0.23(0.06)	0.27	5.1	210.00
3	20.47	8.73	4.494	0.23(0.06)	0.27	5.1	200.00
4	19.94	9.38	4.314	0.23(0.06)	0.27	5.2	212.00
5	18.79	10.88	3.964	0.23(0.06)	0.26	5.3	270.00

```

=====
COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 20.65 TC(MIN.) = 8.47
EFFECTIVE AREA(ACRES) = 5.06 AREA-AVERAGED Fm(INCH/HR) = 0.06
AREA-AVERAGED Fp(INCH/HR) = 0.23 AREA-AVERAGED Ap = 0.27
TOTAL AREA(ACRES) = 5.3
LONGEST FLOWPATH FROM NODE 212.00 TO NODE 208.00 = 1166.00 FEET.
=====

```

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*****
FLOW PROCESS FROM NODE 208.00 TO NODE 208.00 IS CODE = 81
-----
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

```

Appendix C: Small Area Unit Hydrograph Results and Record Drawings

FLOOD ROUTING ANALYSIS
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
 (c) Copyright 1989-2011 Advanced Engineering Software (aes)
 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

* THE VILLAGE - TTM 17439 *
 * 100-YR EXISTING CONDITION - LINE A SINGLE AREA *
 * MCHANDOO *

FILE NAME: EXIS00A.DAT

TIME/DATE OF STUDY: 09:20 01/10/2013

The Small Area Unit Hydrograph Procedures in Section J
 of the Hydrology Manual provides estimates of runoff
 hydrograph and runoff volume for watersheds whose time of
 concentration is less than 25 minutes. The PROGRAM User
 should check the applicability of using the small area unit
 hydrograph procedures, and follow the guidelines in
 Sections J and K.5 in complex watershed modeling.

FLOW PROCESS FROM NODE 100.00 TO NODE 104.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

=====

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 3.50

SOIL-LOSS RATE, Fm, (INCH/HR) = 0.025

LOW LOSS FRACTION = 0.065

TIME OF CONCENTRATION(MIN.) = 7.68

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

USER SPECIFIED RAINFALL VALUES ARE USED:

RETURN FREQUENCY(YEARS) = 100

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.52

30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.09

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.45

3-HOUR POINT RAINFALL VALUE(INCHES) = 2.43

6-HOUR POINT RAINFALL VALUE(INCHES) = 3.36

24-HOUR POINT RAINFALL VALUE(INCHES) = 5.63

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.39

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.25

=====

24 - HOUR STORM
 RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	3.8	7.6	11.4	15.2
14.000	0.5104	1.08	. Q	. V	.	.	.
14.017	0.5119	1.09	. Q	. V	.	.	.
14.033	0.5135	1.09	. Q	. V	.	.	.
14.050	0.5150	1.10	. Q	. V	.	.	.
14.067	0.5165	1.11	. Q	. V	.	.	.
14.083	0.5180	1.11	. Q	. V	.	.	.
14.100	0.5196	1.12	. Q	. V	.	.	.
14.117	0.5211	1.12	. Q	. V	.	.	.
14.133	0.5227	1.13	. Q	. V	.	.	.
14.150	0.5242	1.13	. Q	. V	.	.	.
14.167	0.5258	1.13	. Q	. V	.	.	.
14.183	0.5274	1.14	. Q	. V	.	.	.
14.200	0.5289	1.14	. Q	. V	.	.	.
14.217	0.5305	1.15	. Q	. V	.	.	.
14.233	0.5321	1.15	. Q	. V	.	.	.
14.250	0.5337	1.16	. Q	. V	.	.	.
14.267	0.5353	1.17	. Q	. V	.	.	.
14.283	0.5369	1.18	. Q	. V	.	.	.
14.300	0.5386	1.19	. Q	. V	.	.	.
14.317	0.5402	1.20	. Q	. V	.	.	.
14.333	0.5419	1.20	. Q	. V	.	.	.
14.350	0.5436	1.21	. Q	. V	.	.	.
14.367	0.5452	1.21	. Q	. V	.	.	.
14.383	0.5469	1.22	. Q	. V	.	.	.
14.400	0.5486	1.22	. Q	. V	.	.	.
14.417	0.5503	1.23	. Q	. V	.	.	.
14.433	0.5520	1.23	. Q	. V	.	.	.
14.450	0.5537	1.24	. Q	. V	.	.	.
14.467	0.5554	1.24	. Q	. V	.	.	.
14.483	0.5571	1.25	. Q	. V	.	.	.
14.500	0.5589	1.26	. Q	. V	.	.	.
14.517	0.5606	1.27	. Q	. V	.	.	.
14.533	0.5624	1.28	. Q	. V	.	.	.
14.550	0.5641	1.29	. Q	. V	.	.	.
14.567	0.5659	1.30	. Q	. V	.	.	.
14.583	0.5677	1.31	. Q	. V	.	.	.
14.600	0.5696	1.32	. Q	. V	.	.	.
14.617	0.5714	1.33	. Q	. V	.	.	.
14.633	0.5732	1.33	. Q	. V	.	.	.
14.650	0.5751	1.34	. Q	. V	.	.	.
14.667	0.5769	1.34	. Q	. V	.	.	.
14.683	0.5788	1.35	. Q	. V	.	.	.
14.700	0.5806	1.36	. Q	. V	.	.	.
14.717	0.5825	1.36	. Q	. V	.	.	.
14.733	0.5844	1.37	. Q	. V	.	.	.
14.750	0.5863	1.38	. Q	. V	.	.	.
14.767	0.5882	1.40	. Q	. V	.	.	.
14.783	0.5902	1.41	. Q	. V	.	.	.
14.800	0.5921	1.42	. Q	. V	.	.	.
14.817	0.5941	1.44	. Q	. V	.	.	.

14.833	0.5961	1.45	.	Q	.	V	.	.	.
14.850	0.5981	1.46	.	Q	.	V	.	.	.
14.867	0.6002	1.47	.	Q	.	V	.	.	.
14.883	0.6022	1.48	.	Q	.	V	.	.	.
14.900	0.6042	1.49	.	Q	.	V	.	.	.
14.917	0.6063	1.50	.	Q	.	V	.	.	.
14.933	0.6084	1.50	.	Q	.	V	.	.	.
14.950	0.6105	1.51	.	Q	.	V	.	.	.
14.967	0.6126	1.52	.	Q	.	V	.	.	.
14.983	0.6147	1.53	.	Q	.	V	.	.	.
15.000	0.6168	1.55	.	Q	.	V	.	.	.
15.017	0.6189	1.56	.	Q	.	V	.	.	.
15.033	0.6211	1.58	.	Q	.	V	.	.	.
15.050	0.6233	1.60	.	Q	.	V	.	.	.
15.067	0.6256	1.62	.	Q	.	V	.	.	.
15.083	0.6278	1.64	.	Q	.	V	.	.	.
15.100	0.6301	1.66	.	Q	.	V	.	.	.
15.117	0.6324	1.67	.	Q	.	V	.	.	.
15.133	0.6347	1.68	.	Q	.	V	.	.	.
15.150	0.6371	1.70	.	Q	.	V	.	.	.
15.167	0.6394	1.71	.	Q	.	V	.	.	.
15.183	0.6418	1.72	.	Q	.	V	.	.	.
15.200	0.6442	1.73	.	Q	.	V	.	.	.
15.217	0.6466	1.74	.	Q	.	V	.	.	.
15.233	0.6490	1.75	.	Q	.	V	.	.	.
15.250	0.6514	1.77	.	Q	.	V	.	.	.
15.267	0.6539	1.80	.	Q	.	V	.	.	.
15.283	0.6564	1.83	.	Q	.	V	.	.	.
15.300	0.6590	1.86	.	Q	.	V	.	.	.
15.317	0.6616	1.89	.	Q	.	V	.	.	.
15.333	0.6642	1.92	.	Q	.	V	.	.	.
15.350	0.6669	1.94	.	Q	.	V	.	.	.
15.367	0.6696	1.97	.	Q	.	V	.	.	.
15.383	0.6723	1.97	.	Q	.	V	.	.	.
15.400	0.6750	1.96	.	Q	.	V	.	.	.
15.417	0.6777	1.95	.	Q	.	V	.	.	.
15.433	0.6804	1.94	.	Q	.	V	.	.	.
15.450	0.6830	1.93	.	Q	.	V	.	.	.
15.467	0.6857	1.92	.	Q	.	V	.	.	.
15.483	0.6883	1.91	.	Q	.	V	.	.	.
15.500	0.6909	1.91	.	Q	.	V	.	.	.
15.517	0.6936	1.95	.	Q	.	V	.	.	.
15.533	0.6963	2.00	.	Q	.	V	.	.	.
15.550	0.6992	2.04	.	Q	.	V	.	.	.
15.567	0.7020	2.08	.	Q	.	V	.	.	.
15.583	0.7050	2.13	.	Q	.	V	.	.	.
15.600	0.7080	2.17	.	Q	.	V	.	.	.
15.617	0.7110	2.22	.	Q	.	V	.	.	.
15.633	0.7141	2.26	.	Q	.	V	.	.	.
15.650	0.7173	2.29	.	Q	.	V	.	.	.
15.667	0.7205	2.33	.	Q	.	V	.	.	.
15.683	0.7238	2.37	.	Q	.	V	.	.	.
15.700	0.7271	2.41	.	Q	.	V	.	.	.
15.717	0.7304	2.45	.	Q	.	V	.	.	.
15.733	0.7339	2.48	.	Q	.	V	.	.	.
15.750	0.7373	2.53	.	Q	.	V	.	.	.
15.767	0.7410	2.65	.	Q	.	V	.	.	.
15.783	0.7448	2.79	.	Q	.	V	.	.	.
15.800	0.7489	2.94	.	Q	.	V	.	.	.
15.817	0.7531	3.08	.	Q	.	V	.	.	.
15.833	0.7576	3.23	.	Q	.	V	.	.	.
15.850	0.7622	3.37	.	Q	.	V	.	.	.
15.867	0.7671	3.51	.	Q	.	V	.	.	.
15.883	0.7721	3.66	.	Q	.	V	.	.	.

15.900	0.7774	3.84	.	Q	.	V	.	.	.
15.917	0.7829	4.02	.	Q	.	V	.	.	.
15.933	0.7887	4.19	.	Q	.	V	.	.	.
15.950	0.7947	4.37	.	Q	.	V	.	.	.
15.967	0.8010	4.54	.	Q	.	V	.	.	.
15.983	0.8075	4.72	.	Q	.	V	.	.	.
16.000	0.8142	4.90	.	Q	.	V	.	.	.
16.017	0.8220	5.65	.	Q	.	V	.	.	.
16.033	0.8316	6.98	.	Q	.	V	.	.	.
16.050	0.8431	8.31	.	Q	.	V	.	.	.
16.067	0.8564	9.64	.	Q	.	V	.	.	.
16.083	0.8715	10.97	.	Q	.	V	.	.	.
16.100	0.8884	12.30	.	Q	.	V	.	.	.
16.117	0.9072	13.63	.	Q	.	V	.	.	.
16.133	0.9281	15.20	.	Q	.	V	.	.	.
16.150	0.9473	13.89	.	Q	.	V	.	.	.
16.167	0.9642	12.30	.	Q	.	V	.	.	.
16.183	0.9789	10.70	.	Q	.	V	.	.	.
16.200	0.9915	9.11	.	Q	.	V	.	.	.
16.217	1.0018	7.52	.	Q	.	V	.	.	.
16.233	1.0100	5.92	.	Q	.	V	.	.	.
16.250	1.0160	4.33	.	Q	.	V	.	.	.
16.267	1.0201	3.03	.	Q	.	V	.	.	.
16.283	1.0240	2.82	.	Q	.	V	.	.	.
16.300	1.0277	2.69	.	Q	.	V	.	.	.
16.317	1.0313	2.57	.	Q	.	V	.	.	.
16.333	1.0346	2.45	.	Q	.	V	.	.	.
16.350	1.0379	2.33	.	Q	.	V	.	.	.
16.367	1.0409	2.21	.	Q	.	V	.	.	.
16.383	1.0438	2.08	.	Q	.	V	.	.	.
16.400	1.0465	2.01	.	Q	.	V	.	.	.
16.417	1.0493	1.99	.	Q	.	V	.	.	.
16.433	1.0520	1.97	.	Q	.	V	.	.	.
16.450	1.0547	1.95	.	Q	.	V	.	.	.
16.467	1.0573	1.92	.	Q	.	V	.	.	.
16.483	1.0599	1.90	.	Q	.	V	.	.	.
16.500	1.0625	1.88	.	Q	.	V	.	.	.
16.517	1.0651	1.86	.	Q	.	V	.	.	.
16.533	1.0676	1.83	.	Q	.	V	.	.	.
16.550	1.0701	1.80	.	Q	.	V	.	.	.
16.567	1.0725	1.76	.	Q	.	V	.	.	.
16.583	1.0749	1.73	.	Q	.	V	.	.	.
16.600	1.0772	1.69	.	Q	.	V	.	.	.
16.617	1.0795	1.66	.	Q	.	V	.	.	.
16.633	1.0818	1.63	.	Q	.	V	.	.	.
16.650	1.0839	1.59	.	Q	.	V	.	.	.
16.667	1.0861	1.57	.	Q	.	V	.	.	.
16.683	1.0882	1.55	.	Q	.	V	.	.	.
16.700	1.0903	1.52	.	Q	.	V	.	.	.
16.717	1.0924	1.50	.	Q	.	V	.	.	.
16.733	1.0944	1.48	.	Q	.	V	.	.	.
16.750	1.0964	1.45	.	Q	.	V	.	.	.
16.767	1.0984	1.43	.	Q	.	V	.	.	.
16.783	1.1003	1.41	.	Q	.	V	.	.	.
16.800	1.1022	1.39	.	Q	.	V	.	.	.
16.817	1.1041	1.37	.	Q	.	V	.	.	.
16.833	1.1060	1.35	.	Q	.	V	.	.	.
16.850	1.1078	1.34	.	Q	.	V	.	.	.
16.867	1.1097	1.32	.	Q	.	V	.	.	.
16.883	1.1115	1.30	.	Q	.	V	.	.	.
16.900	1.1132	1.29	.	Q	.	V	.	.	.
16.917	1.1150	1.27	.	Q	.	V	.	.	.
16.933	1.1167	1.26	.	Q	.	V	.	.	.
16.950	1.1184	1.24	.	Q	.	V	.	.	.

16.967	1.1201	1.23	. Q	.	.	. V	.
16.983	1.1218	1.22	. Q	.	.	. V	.
17.000	1.1235	1.20	. Q	.	.	. V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
=====	=====
0%	1021.0
10%	520.0
20%	135.0
30%	80.0
40%	60.0
50%	50.0
60%	40.0
70%	35.0
80%	25.0
90%	10.0
=====	=====

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
(c) Copyright 1989-2011 Advanced Engineering Software (aes)
Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * THE VILLAGE - TTM 17439
* 100-YR EXISTING CONDITION - LINE N
* MCHANDOO

FILE NAME: EXIS00N.DAT
TIME/DATE OF STUDY: 13:10 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J
of the Hydrology Manual provides estimates of runoff
hydrograph and runoff volume for watersheds whose time of
concentration is less than 25 minutes. The PROGRAM User
should check the applicability of using the small area unit
hydrograph procedures, and follow the guidelines in
Sections J and K.5 in complex watershed modeling.

FLOW PROCESS FROM NODE 200.00 TO NODE 205.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
TOTAL CATCHMENT AREA(ACRES) = 5.80
SOIL-LOSS RATE, Fm, (INCH/HR) = 0.020
LOW LOSS FRACTION = 0.061
TIME OF CONCENTRATION(MIN.) = 9.19
SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
USER SPECIFIED RAINFALL VALUES ARE USED:
RETURN FREQUENCY(YEARS) = 100
5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.52
30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.09
1-HOUR POINT RAINFALL VALUE(INCHES) = 1.45
3-HOUR POINT RAINFALL VALUE(INCHES) = 2.43
6-HOUR POINT RAINFALL VALUE(INCHES) = 3.36
24-HOUR POINT RAINFALL VALUE(INCHES) = 5.63

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 2.32
TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.40

=====

24 - HOUR STORM
RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

Table with columns: TIME(HRS), VOLUME(AF), Q(CFS), and rainfall intensity values (0., 5.7, 11.3, 17.0, 22.7). Rows show data from 14.000 to 14.817 hours.

14.833	0.9879	2.39	.	Q	.	V	.	.	.
14.850	0.9912	2.41	.	Q	.	V	.	.	.
14.867	0.9946	2.43	.	Q	.	V	.	.	.
14.883	0.9980	2.46	.	Q	.	V	.	.	.
14.900	1.0014	2.48	.	Q	.	V	.	.	.
14.917	1.0048	2.50	.	Q	.	V	.	.	.
14.933	1.0083	2.53	.	Q	.	V	.	.	.
14.950	1.0118	2.54	.	Q	.	V	.	.	.
14.967	1.0153	2.56	.	Q	.	V	.	.	.
14.983	1.0189	2.57	.	Q	.	V	.	.	.
15.000	1.0224	2.59	.	Q	.	V	.	.	.
15.017	1.0260	2.60	.	Q	.	V	.	.	.
15.033	1.0296	2.61	.	Q	.	V	.	.	.
15.050	1.0332	2.63	.	Q	.	V	.	.	.
15.067	1.0369	2.64	.	Q	.	V	.	.	.
15.083	1.0405	2.66	.	Q	.	V	.	.	.
15.100	1.0442	2.68	.	Q	.	V	.	.	.
15.117	1.0480	2.72	.	Q	.	V	.	.	.
15.133	1.0518	2.76	.	Q	.	V	.	.	.
15.150	1.0556	2.79	.	Q	.	V	.	.	.
15.167	1.0595	2.83	.	Q	.	V	.	.	.
15.183	1.0635	2.86	.	Q	.	V	.	.	.
15.200	1.0675	2.90	.	Q	.	V	.	.	.
15.217	1.0715	2.93	.	Q	.	V	.	.	.
15.233	1.0756	2.97	.	Q	.	V	.	.	.
15.250	1.0797	3.00	.	Q	.	V	.	.	.
15.267	1.0839	3.02	.	Q	.	V	.	.	.
15.283	1.0881	3.05	.	Q	.	V	.	.	.
15.300	1.0923	3.07	.	Q	.	V	.	.	.
15.317	1.0966	3.09	.	Q	.	V	.	.	.
15.333	1.1009	3.12	.	Q	.	V	.	.	.
15.350	1.1052	3.14	.	Q	.	V	.	.	.
15.367	1.1096	3.16	.	Q	.	V	.	.	.
15.383	1.1139	3.19	.	Q	.	V	.	.	.
15.400	1.1184	3.21	.	Q	.	V	.	.	.
15.417	1.1228	3.22	.	Q	.	V	.	.	.
15.433	1.1273	3.24	.	Q	.	V	.	.	.
15.450	1.1317	3.25	.	Q	.	V	.	.	.
15.467	1.1362	3.27	.	Q	.	V	.	.	.
15.483	1.1408	3.29	.	Q	.	V	.	.	.
15.500	1.1453	3.30	.	Q	.	V	.	.	.
15.517	1.1499	3.32	.	Q	.	V	.	.	.
15.533	1.1545	3.33	.	Q	.	V	.	.	.
15.550	1.1591	3.35	.	Q	.	V	.	.	.
15.567	1.1638	3.40	.	Q	.	V	.	.	.
15.583	1.1685	3.45	.	Q	.	V	.	.	.
15.600	1.1733	3.49	.	Q	.	V	.	.	.
15.617	1.1782	3.54	.	Q	.	V	.	.	.
15.633	1.1831	3.59	.	Q	.	V	.	.	.
15.650	1.1882	3.63	.	Q	.	V	.	.	.
15.667	1.1932	3.68	.	Q	.	V	.	.	.
15.683	1.1984	3.73	.	Q	.	V	.	.	.
15.700	1.2036	3.79	.	Q	.	V	.	.	.
15.717	1.2090	3.94	.	Q	.	V	.	.	.
15.733	1.2147	4.12	.	Q	.	V	.	.	.
15.750	1.2206	4.30	.	Q	.	.V	.	.	.
15.767	1.2268	4.48	.	Q	.	.V	.	.	.
15.783	1.2332	4.66	.	Q	.	.V	.	.	.
15.800	1.2398	4.83	.	Q	.	.V	.	.	.
15.817	1.2467	5.01	.	Q	.	.V	.	.	.
15.833	1.2539	5.19	.	Q	.	.V	.	.	.
15.850	1.2613	5.37	.	Q	.	.V	.	.	.
15.867	1.2690	5.58	.	Q	.	.V	.	.	.
15.883	1.2770	5.80	.	Q	.	.V	.	.	.

15.900	1.2853	6.02	.	Q	.	V	.	.	.
15.917	1.2939	6.24	.	.Q	.	V	.	.	.
15.933	1.3028	6.46	.	.Q	.	V	.	.	.
15.950	1.3120	6.68	.	.Q	.	V	.	.	.
15.967	1.3215	6.90	.	.Q	.	V	.	.	.
15.983	1.3313	7.12	.	.Q	.	V	.	.	.
16.000	1.3414	7.34	.	.Q	.	V	.	.	.
16.017	1.3528	8.28	.	Q	.	V	.	.	.
16.033	1.3665	9.94	.	.	Q	V	.	.	.
16.050	1.3824	11.59	.	.	Q	V	.	.	.
16.067	1.4007	13.25	.	.	QV	.	.	.	.
16.083	1.4212	14.91	.	.	V	Q	.	.	.
16.100	1.4440	16.57	.	.	V	Q	.	.	.
16.117	1.4691	18.22	.	.	V	Q	.	.	.
16.133	1.4965	19.88	.	.	V	Q	.	.	.
16.150	1.5262	21.54	.	.	V	Q	.	.	.
16.167	1.5574	22.68	.	.	V	Q	.	.	.
16.183	1.5851	20.08	.	.	V	Q	.	.	.
16.200	1.6100	18.09	.	.	V	Q	.	.	.
16.217	1.6322	16.10	.	.	Q	.	.	.	.
16.233	1.6516	14.11	.	.	Q	V	.	.	.
16.250	1.6683	12.13	.	.	.Q	V	.	.	.
16.267	1.6823	10.14	.	.	Q	V	.	.	.
16.283	1.6935	8.15	.	Q	.	V	.	.	.
16.300	1.7020	6.16	.	Q	.	V	.	.	.
16.317	1.7083	4.53	.	Q	.	V	.	.	.
16.333	1.7141	4.27	.	Q	.	V	.	.	.
16.350	1.7198	4.14	.	Q	.	V	.	.	.
16.367	1.7254	4.01	.	Q	.	V	.	.	.
16.383	1.7307	3.88	.	Q	.	V	.	.	.
16.400	1.7359	3.75	.	Q	.	V	.	.	.
16.417	1.7409	3.62	.	Q	.	V	.	.	.
16.433	1.7457	3.50	.	Q	.	V	.	.	.
16.450	1.7503	3.37	.	Q	.	V	.	.	.
16.467	1.7548	3.25	.	Q	.	V	.	.	.
16.483	1.7592	3.19	.	Q	.	V	.	.	.
16.500	1.7635	3.14	.	Q	.	V	.	.	.
16.517	1.7678	3.10	.	Q	.	V	.	.	.
16.533	1.7720	3.05	.	Q	.	V	.	.	.
16.550	1.7761	3.01	.	Q	.	V	.	.	.
16.567	1.7802	2.96	.	Q	.	V	.	.	.
16.583	1.7842	2.92	.	Q	.	V	.	.	.
16.600	1.7882	2.87	.	Q	.	V	.	.	.
16.617	1.7921	2.82	.	Q	.	V	.	.	.
16.633	1.7959	2.78	.	Q	.	V	.	.	.
16.650	1.7997	2.74	.	Q	.	.V	.	.	.
16.667	1.8034	2.69	.	Q	.	.V	.	.	.
16.683	1.8070	2.65	.	Q	.	.V	.	.	.
16.700	1.8106	2.61	.	Q	.	.V	.	.	.
16.717	1.8141	2.57	.	Q	.	.V	.	.	.
16.733	1.8176	2.52	.	Q	.	.V	.	.	.
16.750	1.8210	2.48	.	Q	.	.V	.	.	.
16.767	1.8244	2.44	.	Q	.	.V	.	.	.
16.783	1.8277	2.40	.	Q	.	.V	.	.	.
16.800	1.8310	2.37	.	Q	.	.V	.	.	.
16.817	1.8342	2.34	.	Q	.	.V	.	.	.
16.833	1.8374	2.31	.	Q	.	.V	.	.	.
16.850	1.8405	2.28	.	Q	.	.V	.	.	.
16.867	1.8436	2.25	.	Q	.	.V	.	.	.
16.883	1.8467	2.22	.	Q	.	.V	.	.	.
16.900	1.8497	2.19	.	Q	.	.V	.	.	.
16.917	1.8527	2.16	.	Q	.	.V	.	.	.
16.933	1.8556	2.14	.	Q	.	.V	.	.	.
16.950	1.8586	2.12	.	Q	.	.V	.	.	.

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16.967 1.8614 2.09 . Q . . . V .
16.983 1.8643 2.07 . Q . . . V .
17.000 1.8671 2.05 . Q . . . V .
    
```

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	645.0
20%	160.0
30%	100.0
40%	75.0
50%	65.0
60%	50.0
70%	40.0
80%	25.0
90%	10.0

 FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

STREAM HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	7.5	15.0	22.5	30.0
15.800	1.2398	4.83	. Q .	.V .	. .	. .	. .
15.817	1.2467	5.01	. Q .	.V .	. .	. .	. .
15.833	1.2539	5.19	. Q .	.V .	. .	. .	. .
15.850	1.2613	5.37	. Q .	.V .	. .	. .	. .
15.867	1.2690	5.58	. Q .	.V .	. .	. .	. .
15.883	1.2770	5.80	. Q .	.V .	. .	. .	. .
15.900	1.2853	6.02	. Q .	.V .	. .	. .	. .
15.917	1.2939	6.24	. Q .	.V .	. .	. .	. .
15.933	1.3028	6.46	. Q .	.V .	. .	. .	. .
15.950	1.3120	6.68	. Q .	.V .	. .	. .	. .
15.967	1.3215	6.90	. Q .	.V .	. .	. .	. .
15.983	1.3313	7.12	. Q .	.V .	. .	. .	. .
16.000	1.3414	7.34	. Q .	.V .	. .	. .	. .
16.017	1.3528	8.28	. Q .	.V .	. .	. .	. .
16.033	1.3665	9.94	. Q .	.V .	. .	. .	. .
16.050	1.3824	11.59	. Q .	.V .	. .	. .	. .
16.067	1.4007	13.25	. Q .	.V .	. .	. .	. .
16.083	1.4212	14.91	. Q .	.V .	. .	. .	. .
16.100	1.4440	16.57	. Q .	.V .	. .	. .	. .
16.117	1.4691	18.22	. Q .	.V .	. .	. .	. .
16.133	1.4965	19.88	. Q .	.V .	. .	. .	. .
16.150	1.5262	21.54	. Q .	.V .	. .	. .	. .
16.167	1.5574	22.68	. Q .	.V .	. .	. .	. .
16.183	1.5851	20.08	. Q .	.V .	. .	. .	. .
16.200	1.6100	18.09	. Q .	.V .	. .	. .	. .
16.217	1.6322	16.10	. Q .	.V .	. .	. .	. .
16.233	1.6516	14.11	. Q .	.V .	. .	. .	. .
16.250	1.6683	12.13	. Q .	.V .	. .	. .	. .

```

16.267 1.6823 10.14 . . Q . . V . .
16.283 1.6935 8.15 . . Q . . V . .
16.300 1.7020 6.16 . . Q . . V . .
16.317 1.7083 4.53 . . Q . . V . .
16.333 1.7141 4.27 . . Q . . V . .
16.350 1.7198 4.14 . . Q . . V . .
16.367 1.7254 4.01 . . Q . . V . .
16.383 1.7307 3.88 . . Q . . V . .
16.400 1.7359 3.75 . . Q . . V . .
16.417 1.7409 3.62 . . Q . . V . .
16.433 1.7457 3.50 . . Q . . V . .
16.450 1.7503 3.37 . . Q . . V . .
16.467 1.7548 3.25 . . Q . . V . .
16.483 1.7592 3.19 . . Q . . V . .
16.500 1.7635 3.14 . . Q . . V . .
16.517 1.7678 3.10 . . Q . . V . .
16.533 1.7720 3.05 . . Q . . V . .
16.550 1.7761 3.01 . . Q . . V . .
16.567 1.7802 2.96 . . Q . . V . .
16.583 1.7842 2.92 . . Q . . V . .
16.600 1.7882 2.87 . . Q . . V . .
16.617 1.7921 2.82 . . Q . . V . .
16.633 1.7959 2.78 . . Q . . V . .
16.650 1.7997 2.74 . . Q . . V . .
16.667 1.8034 2.69 . . Q . . V . .
16.683 1.8070 2.65 . . Q . . V . .
16.700 1.8106 2.61 . . Q . . V . .
16.717 1.8141 2.57 . . Q . . V . .
16.733 1.8176 2.52 . . Q . . V . .
16.750 1.8210 2.48 . . Q . . V . .
16.767 1.8244 2.44 . . Q . . V . .
16.783 1.8277 2.40 . . Q . . V . .
16.800 1.8310 2.37 . . Q . . V . .
    
```

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1009.0
10%	645.0
20%	160.0
30%	100.0
40%	75.0
50%	65.0
60%	50.0
70%	40.0
80%	25.0
90%	10.0

END OF FLOODSCx ROUTING ANALYSIS

F L O O D R O U T I N G A N A L Y S I S
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
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 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

* THE VILLAGE - TTM 17439 *
 * 25-YR EXISTING CONDITION - LINE A *
 * MCHANDOO *

FILE NAME: EXIS25A.DAT

TIME/DATE OF STUDY: 09:12 01/10/2013

The Small Area Unit Hydrograph Procedures in Section J
 of the Hydrology Manual provides estimates of runoff
 hydrograph and runoff volume for watersheds whose time of
 concentration is less than 25 minutes. The PROGRAM User
 should check the applicability of using the small area unit
 hydrograph procedures, and follow the guidelines in
 Sections J and K.5 in complex watershed modeling.

FLOW PROCESS FROM NODE 100.00 TO NODE 104.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

=====

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 3.50

SOIL-LOSS RATE, Fm, (INCH/HR) = 0.025

LOW LOSS FRACTION = 0.111

TIME OF CONCENTRATION(MIN.) = 7.80

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

USER SPECIFIED RAINFALL VALUES ARE USED:

RETURN FREQUENCY(YEARS) = 25

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.40

30-MINUTE POINT RAINFALL VALUE(INCHES) = 0.87

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.15

3-HOUR POINT RAINFALL VALUE(INCHES) = 1.94

6-HOUR POINT RAINFALL VALUE(INCHES) = 2.71

24-HOUR POINT RAINFALL VALUE(INCHES) = 4.49

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.08

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.23

=====

2 4 - H O U R S T O R M
 R U N O F F H Y D R O G R A P H

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	2.9	5.8	8.8	11.7
14.000	0.3875	0.88	. Q	. V	.	.	.
14.017	0.3887	0.88	. Q	. V	.	.	.
14.033	0.3899	0.89	. Q	. V	.	.	.
14.050	0.3911	0.89	. Q	. V	.	.	.
14.067	0.3924	0.89	. Q	. V	.	.	.
14.083	0.3936	0.90	. Q	. V	.	.	.
14.100	0.3948	0.90	. Q	. V	.	.	.
14.117	0.3961	0.90	. Q	. V	.	.	.
14.133	0.3973	0.90	. Q	. V	.	.	.
14.150	0.3986	0.90	. Q	. V	.	.	.
14.167	0.3998	0.90	. Q	. V	.	.	.
14.183	0.4011	0.90	. Q	. V	.	.	.
14.200	0.4023	0.91	. Q	. V	.	.	.
14.217	0.4036	0.91	. Q	. V	.	.	.
14.233	0.4048	0.92	. Q	. V	.	.	.
14.250	0.4061	0.93	. Q	. V	.	.	.
14.267	0.4074	0.93	. Q	. V	.	.	.
14.283	0.4087	0.94	. Q	. V	.	.	.
14.300	0.4100	0.95	. Q	. V	.	.	.
14.317	0.4113	0.95	. Q	. V	.	.	.
14.333	0.4126	0.96	. Q	. V	.	.	.
14.350	0.4139	0.96	. Q	. V	.	.	.
14.367	0.4153	0.96	. Q	. V	.	.	.
14.383	0.4166	0.97	. Q	. V	.	.	.
14.400	0.4179	0.97	. Q	. V	.	.	.
14.417	0.4193	0.97	. Q	. V	.	.	.
14.433	0.4206	0.98	. Q	. V	.	.	.
14.450	0.4220	0.98	. Q	. V	.	.	.
14.467	0.4233	0.99	. Q	. V	.	.	.
14.483	0.4247	1.00	. Q	. V	.	.	.
14.500	0.4261	1.00	. Q	. V	.	.	.
14.517	0.4275	1.01	. Q	. V	.	.	.
14.533	0.4289	1.02	. Q	. V	.	.	.
14.550	0.4303	1.03	. Q	. V	.	.	.
14.567	0.4317	1.04	. Q	. V	.	.	.
14.583	0.4332	1.04	. Q	. V	.	.	.
14.600	0.4346	1.05	. Q	. V	.	.	.
14.617	0.4361	1.05	. Q	. V	.	.	.
14.633	0.4375	1.06	. Q	. V	.	.	.
14.650	0.4390	1.06	. Q	. V	.	.	.
14.667	0.4405	1.07	. Q	. V	.	.	.
14.683	0.4419	1.07	. Q	. V	.	.	.
14.700	0.4434	1.08	. Q	. V	.	.	.
14.717	0.4449	1.08	. Q	. V	.	.	.
14.733	0.4464	1.09	. Q	. V	.	.	.
14.750	0.4479	1.10	. Q	. V	.	.	.
14.767	0.4495	1.11	. Q	. V	.	.	.
14.783	0.4510	1.12	. Q	. V	.	.	.
14.800	0.4526	1.13	. Q	. V	.	.	.
14.817	0.4542	1.14	. Q	. V	.	.	.

14.833	0.4557	1.16	.	Q	.	V	.	.	.
14.850	0.4573	1.16	.	Q	.	V	.	.	.
14.867	0.4590	1.17	.	Q	.	V	.	.	.
14.883	0.4606	1.17	.	Q	.	V	.	.	.
14.900	0.4622	1.18	.	Q	.	V	.	.	.
14.917	0.4638	1.19	.	Q	.	V	.	.	.
14.933	0.4655	1.19	.	Q	.	V	.	.	.
14.950	0.4671	1.20	.	Q	.	V	.	.	.
14.967	0.4688	1.21	.	Q	.	V	.	.	.
14.983	0.4705	1.22	.	Q	.	V	.	.	.
15.000	0.4722	1.23	.	Q	.	V	.	.	.
15.017	0.4739	1.25	.	Q	.	V	.	.	.
15.033	0.4756	1.26	.	Q	.	V	.	.	.
15.050	0.4774	1.28	.	Q	.	V	.	.	.
15.067	0.4792	1.29	.	Q	.	V	.	.	.
15.083	0.4810	1.31	.	Q	.	V	.	.	.
15.100	0.4828	1.32	.	Q	.	V	.	.	.
15.117	0.4846	1.33	.	Q	.	V	.	.	.
15.133	0.4864	1.34	.	Q	.	V	.	.	.
15.150	0.4883	1.35	.	Q	.	V	.	.	.
15.167	0.4902	1.35	.	Q	.	V	.	.	.
15.183	0.4920	1.36	.	Q	.	V	.	.	.
15.200	0.4939	1.37	.	Q	.	V	.	.	.
15.217	0.4958	1.38	.	Q	.	V	.	.	.
15.233	0.4977	1.39	.	Q	.	V	.	.	.
15.250	0.4997	1.42	.	Q	.	V	.	.	.
15.267	0.5017	1.44	.	Q	.	V	.	.	.
15.283	0.5037	1.46	.	Q	.	V	.	.	.
15.300	0.5057	1.48	.	Q	.	V	.	.	.
15.317	0.5078	1.50	.	Q	.	V	.	.	.
15.333	0.5099	1.53	.	Q	.	V	.	.	.
15.350	0.5120	1.55	.	Q	.	V	.	.	.
15.367	0.5142	1.55	.	Q	.	V	.	.	.
15.383	0.5163	1.54	.	Q	.	V	.	.	.
15.400	0.5184	1.53	.	Q	.	V	.	.	.
15.417	0.5205	1.53	.	Q	.	V	.	.	.
15.433	0.5226	1.52	.	Q	.	V	.	.	.
15.450	0.5247	1.51	.	Q	.	V	.	.	.
15.467	0.5267	1.50	.	Q	.	V	.	.	.
15.483	0.5288	1.49	.	Q	.	V	.	.	.
15.500	0.5309	1.50	.	Q	.	V	.	.	.
15.517	0.5330	1.53	.	Q	.	V	.	.	.
15.533	0.5351	1.56	.	Q	.	V	.	.	.
15.550	0.5373	1.59	.	Q	.	V	.	.	.
15.567	0.5395	1.62	.	Q	.	V	.	.	.
15.583	0.5418	1.65	.	Q	.	V	.	.	.
15.600	0.5441	1.67	.	Q	.	V	.	.	.
15.617	0.5465	1.70	.	Q	.	V	.	.	.
15.633	0.5488	1.73	.	Q	.	V	.	.	.
15.650	0.5513	1.76	.	Q	.	V	.	.	.
15.667	0.5537	1.79	.	Q	.	V	.	.	.
15.683	0.5562	1.82	.	Q	.	V	.	.	.
15.700	0.5588	1.85	.	Q	.	V	.	.	.
15.717	0.5614	1.88	.	Q	.	V	.	.	.
15.733	0.5640	1.91	.	Q	.	V	.	.	.
15.750	0.5667	1.96	.	Q	.	V	.	.	.
15.767	0.5696	2.08	.	Q	.	V	.	.	.
15.783	0.5726	2.21	.	Q	.	V	.	.	.
15.800	0.5758	2.35	.	Q	.	V	.	.	.
15.817	0.5793	2.48	.	Q	.	V	.	.	.
15.833	0.5829	2.61	.	Q	.	V	.	.	.
15.850	0.5866	2.75	.	Q	.	V	.	.	.
15.867	0.5906	2.88	.	Q	.	V	.	.	.
15.883	0.5948	3.01	.	Q	.	V	.	.	.

15.900	0.5991	3.15	.	Q	.	V	.	.	.
15.917	0.6036	3.29	.	.Q	.	V	.	.	.
15.933	0.6084	3.43	.	.Q	.	V	.	.	.
15.950	0.6133	3.56	.	.Q	.	V	.	.	.
15.967	0.6184	3.70	.	.Q	.	V	.	.	.
15.983	0.6236	3.84	.	.Q	.	V	.	.	.
16.000	0.6291	3.97	.	.Q	.	V	.	.	.
16.017	0.6354	4.53	.	.Q	.	V	.	.	.
16.033	0.6429	5.51	.	.Q	.	V	.	.	.
16.050	0.6519	6.49	.	.Q	.	V	.	.	.
16.067	0.6622	7.47	.	.Q	.	VQ	.	.	.
16.083	0.6738	8.45	.	.Q	.	V	Q	.	.
16.100	0.6868	9.42	.	.Q	.	V	.	Q	.
16.117	0.7011	10.40	.	.Q	.	V	.	.	Q
16.133	0.7172	11.68	.	.Q	.	V	.	.	Q
16.150	0.7321	10.84	.	.Q	.	V	.	.	Q
16.167	0.7454	9.66	.	.Q	.	V	.	Q	.
16.183	0.7571	8.47	.	.Q	.	VQ	.	.	.
16.200	0.7671	7.28	.	.Q	.	V	.	.	.
16.217	0.7755	6.09	.	.Q	.	V	.	.	.
16.233	0.7823	4.90	.	.Q	.	V	.	.	.
16.250	0.7874	3.72	.	.Q	.	V	.	.	.
16.267	0.7910	2.61	.	.Q	.	V	.	.	.
16.283	0.7942	2.31	.	.Q	.	V	.	.	.
16.300	0.7972	2.20	.	.Q	.	V	.	.	.
16.317	0.8001	2.08	.	.Q	.	V	.	.	.
16.333	0.8028	1.97	.	.Q	.	V	.	.	.
16.350	0.8054	1.86	.	.Q	.	V	.	.	.
16.367	0.8078	1.75	.	.Q	.	V	.	.	.
16.383	0.8100	1.64	.	.Q	.	V	.	.	.
16.400	0.8121	1.54	.	.Q	.	V	.	.	.
16.417	0.8142	1.53	.	.Q	.	V	.	.	.
16.433	0.8163	1.52	.	.Q	.	V	.	.	.
16.450	0.8184	1.51	.	.Q	.	V	.	.	.
16.467	0.8205	1.50	.	.Q	.	V	.	.	.
16.483	0.8225	1.49	.	.Q	.	V	.	.	.
16.500	0.8246	1.48	.	.Q	.	V	.	.	.
16.517	0.8266	1.47	.	.Q	.	V	.	.	.
16.533	0.8286	1.46	.	.Q	.	V	.	.	.
16.550	0.8306	1.43	.	.Q	.	V	.	.	.
16.567	0.8325	1.40	.	.Q	.	V	.	.	.
16.583	0.8344	1.38	.	.Q	.	V	.	.	.
16.600	0.8363	1.35	.	.Q	.	V	.	.	.
16.617	0.8381	1.32	.	.Q	.	V	.	.	.
16.633	0.8399	1.30	.	.Q	.	V	.	.	.
16.650	0.8416	1.27	.	.Q	.	V	.	.	.
16.667	0.8433	1.25	.	.Q	.	V	.	.	.
16.683	0.8450	1.23	.	.Q	.	V	.	.	.
16.700	0.8467	1.21	.	.Q	.	V	.	.	.
16.717	0.8484	1.19	.	.Q	.	V	.	.	.
16.733	0.8500	1.18	.	.Q	.	V	.	.	.
16.750	0.8516	1.16	.	.Q	.	V	.	.	.
16.767	0.8531	1.14	.	.Q	.	V	.	.	.
16.783	0.8547	1.12	.	.Q	.	V	.	.	.
16.800	0.8562	1.11	.	.Q	.	V	.	.	.
16.817	0.8577	1.09	.	.Q	.	V	.	.	.
16.833	0.8592	1.08	.	.Q	.	V	.	.	.
16.850	0.8607	1.07	.	.Q	.	V	.	.	.
16.867	0.8621	1.05	.	.Q	.	V	.	.	.
16.883	0.8636	1.04	.	.Q	.	V	.	.	.
16.900	0.8650	1.02	.	.Q	.	V	.	.	.
16.917	0.8664	1.01	.	.Q	.	V	.	.	.
16.933	0.8677	1.00	.	.Q	.	V	.	.	.
16.950	0.8691	0.99	.	.Q	.	V	.	.	.

16.967	0.8704	0.98	.	Q	.	.	.	V	.
16.983	0.8718	0.97	.	Q	.	.	.	V	.
17.000	0.8731	0.96	.	Q	.	.	.	V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
=====	=====
0%	1021.0
10%	565.0
20%	145.0
30%	95.0
40%	65.0
50%	55.0
60%	45.0
70%	35.0
80%	25.0
90%	10.0
=====	=====

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
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Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * THE VILLAGE - TTM 17439
* 25-YR EXISTING CONDITION - LINE N
* MCHANDOO

FILE NAME: EXIS25N.DAT
TIME/DATE OF STUDY: 11:11 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J
of the Hydrology Manual provides estimates of runoff
hydrograph and runoff volume for watersheds whose time of
concentration is less than 25 minutes. The PROGRAM User
should check the applicability of using the small area unit
hydrograph procedures, and follow the guidelines in
Sections J and K.5 in complex watershed modeling.

FLOW PROCESS FROM NODE 200.00 TO NODE 205.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
TOTAL CATCHMENT AREA(ACRES) = 5.80
SOIL-LOSS RATE, Fm, (INCH/HR) = 0.020
LOW LOSS FRACTION = 0.107
TIME OF CONCENTRATION(MIN.) = 9.30
SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
USER SPECIFIED RAINFALL VALUES ARE USED:
RETURN FREQUENCY(YEARS) = 25
5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.40
30-MINUTE POINT RAINFALL VALUE(INCHES) = 0.87
1-HOUR POINT RAINFALL VALUE(INCHES) = 1.15
3-HOUR POINT RAINFALL VALUE(INCHES) = 1.94
6-HOUR POINT RAINFALL VALUE(INCHES) = 2.71
24-HOUR POINT RAINFALL VALUE(INCHES) = 4.49

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.80
TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.37

=====

24 - HOUR STORM
RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

Table with columns: TIME(HRS), VOLUME(AF), Q(CFS), and rainfall intensities (0., 4.4, 8.8, 13.1, 17.5). Rows show data from 14.000 to 14.817 hours.

14.833	0.7612	1.91	.	Q	.	V	.	.	.
14.850	0.7639	1.93	.	Q	.	V	.	.	.
14.867	0.7666	1.94	.	Q	.	V	.	.	.
14.883	0.7693	1.96	.	Q	.	V	.	.	.
14.900	0.7720	1.98	.	Q	.	V	.	.	.
14.917	0.7748	2.00	.	Q	.	V	.	.	.
14.933	0.7775	2.01	.	Q	.	V	.	.	.
14.950	0.7803	2.02	.	Q	.	V	.	.	.
14.967	0.7831	2.04	.	Q	.	V	.	.	.
14.983	0.7859	2.05	.	Q	.	V	.	.	.
15.000	0.7888	2.06	.	Q	.	V	.	.	.
15.017	0.7916	2.07	.	Q	.	V	.	.	.
15.033	0.7945	2.08	.	Q	.	V	.	.	.
15.050	0.7974	2.09	.	Q	.	V	.	.	.
15.067	0.8003	2.10	.	Q	.	V	.	.	.
15.083	0.8032	2.12	.	Q	.	V	.	.	.
15.100	0.8061	2.15	.	Q	.	V	.	.	.
15.117	0.8091	2.17	.	Q	.	V	.	.	.
15.133	0.8122	2.20	.	Q	.	V	.	.	.
15.150	0.8152	2.23	.	Q	.	V	.	.	.
15.167	0.8184	2.26	.	Q	.	V	.	.	.
15.183	0.8215	2.29	.	Q	.	V	.	.	.
15.200	0.8247	2.31	.	Q	.	V	.	.	.
15.217	0.8279	2.34	.	Q	.	V	.	.	.
15.233	0.8312	2.37	.	Q	.	V	.	.	.
15.250	0.8345	2.39	.	Q	.	V	.	.	.
15.267	0.8378	2.41	.	Q	.	V	.	.	.
15.283	0.8411	2.42	.	Q	.	V	.	.	.
15.300	0.8445	2.44	.	Q	.	V	.	.	.
15.317	0.8479	2.46	.	Q	.	V	.	.	.
15.333	0.8513	2.48	.	Q	.	V	.	.	.
15.350	0.8547	2.50	.	Q	.	V	.	.	.
15.367	0.8582	2.51	.	Q	.	V	.	.	.
15.383	0.8617	2.53	.	Q	.	V	.	.	.
15.400	0.8652	2.54	.	Q	.	V	.	.	.
15.417	0.8687	2.54	.	Q	.	V	.	.	.
15.433	0.8722	2.54	.	Q	.	V	.	.	.
15.450	0.8757	2.55	.	Q	.	V	.	.	.
15.467	0.8792	2.55	.	Q	.	V	.	.	.
15.483	0.8827	2.55	.	Q	.	V	.	.	.
15.500	0.8862	2.55	.	Q	.	V	.	.	.
15.517	0.8897	2.55	.	Q	.	V	.	.	.
15.533	0.8933	2.56	.	Q	.	V	.	.	.
15.550	0.8968	2.57	.	Q	.	V	.	.	.
15.567	0.9004	2.61	.	Q	.	V	.	.	.
15.583	0.9040	2.65	.	Q	.	V	.	.	.
15.600	0.9077	2.68	.	Q	.	V	.	.	.
15.617	0.9115	2.72	.	Q	.	V	.	.	.
15.633	0.9153	2.76	.	Q	.	V	.	.	.
15.650	0.9191	2.79	.	Q	.	V	.	.	.
15.667	0.9230	2.83	.	Q	.	V	.	.	.
15.683	0.9270	2.87	.	Q	.	V	.	.	.
15.700	0.9310	2.93	.	Q	.	V	.	.	.
15.717	0.9352	3.08	.	Q	.	V	.	.	.
15.733	0.9397	3.25	.	Q	.	V	.	.	.
15.750	0.9444	3.42	.	Q	.	V	.	.	.
15.767	0.9494	3.59	.	Q	.	V	.	.	.
15.783	0.9546	3.76	.	Q	.	V	.	.	.
15.800	0.9600	3.93	.	Q	.	V	.	.	.
15.817	0.9656	4.10	.	Q	.	V	.	.	.
15.833	0.9715	4.27	.	Q	.	V	.	.	.
15.850	0.9776	4.44	.	Q	.	V	.	.	.
15.867	0.9840	4.61	.	Q	.	V	.	.	.
15.883	0.9906	4.78	.	Q	.	V	.	.	.

15.900	0.9974	4.96	.	.Q	.	V	.	.	.
15.917	1.0045	5.13	.	.Q	.	V	.	.	.
15.933	1.0118	5.30	.	.Q	.	V	.	.	.
15.950	1.0193	5.47	.	.Q	.	V	.	.	.
15.967	1.0271	5.65	.	.Q	.	V	.	.	.
15.983	1.0351	5.82	.	.Q	.	V	.	.	.
16.000	1.0434	5.99	.	.Q	.	V	.	.	.
16.017	1.0526	6.69	.	.Q	.	V	.	.	.
16.033	1.0635	7.92	.	.Q	.	V	.	.	.
16.050	1.0761	9.16	.	.Q	.	V	.	.	.
16.067	1.0904	10.39	.	.Q	.	V	.	.	.
16.083	1.1064	11.62	.	.Q	.	V	.	.	.
16.100	1.1241	12.85	.	.Q	.	V	.	.	.
16.117	1.1435	14.08	.	.Q	.	V	.	.	.
16.133	1.1646	15.31	.	.Q	.	V	.	.	.
16.150	1.1874	16.54	.	.Q	.	V	.	.	.
16.167	1.2115	17.53	.	.Q	.	V	.	.	.
16.183	1.2332	15.71	.	.Q	.	V	.	.	.
16.200	1.2527	14.20	.	.Q	.	V	.	.	.
16.217	1.2702	12.68	.	.Q	.	V	.	.	.
16.233	1.2856	11.17	.	.Q	.	V	.	.	.
16.250	1.2989	9.66	.	.Q	.	V	.	.	.
16.267	1.3101	8.14	.	.Q	.	V	.	.	.
16.283	1.3192	6.63	.	.Q	.	V	.	.	.
16.300	1.3263	5.12	.	.Q	.	V	.	.	.
16.317	1.3314	3.72	.	.Q	.	V	.	.	.
16.333	1.3360	3.37	.	.Q	.	V	.	.	.
16.350	1.3405	3.27	.	.Q	.	V	.	.	.
16.367	1.3449	3.17	.	.Q	.	V	.	.	.
16.383	1.3491	3.07	.	.Q	.	V	.	.	.
16.400	1.3532	2.97	.	.Q	.	V	.	.	.
16.417	1.3572	2.88	.	.Q	.	V	.	.	.
16.433	1.3610	2.78	.	.Q	.	V	.	.	.
16.450	1.3647	2.68	.	.Q	.	V	.	.	.
16.467	1.3683	2.58	.	.Q	.	V	.	.	.
16.483	1.3717	2.52	.	.Q	.	V	.	.	.
16.500	1.3752	2.49	.	.Q	.	V	.	.	.
16.517	1.3786	2.46	.	.Q	.	V	.	.	.
16.533	1.3819	2.42	.	.Q	.	V	.	.	.
16.550	1.3852	2.39	.	.Q	.	V	.	.	.
16.567	1.3884	2.35	.	.Q	.	V	.	.	.
16.583	1.3916	2.32	.	.Q	.	V	.	.	.
16.600	1.3948	2.29	.	.Q	.	V	.	.	.
16.617	1.3979	2.25	.	.Q	.	V	.	.	.
16.633	1.4009	2.22	.	.Q	.	V	.	.	.
16.650	1.4039	2.19	.	.Q	.	V	.	.	.
16.667	1.4069	2.15	.	.Q	.	V	.	.	.
16.683	1.4098	2.12	.	.Q	.	V	.	.	.
16.700	1.4127	2.08	.	.Q	.	V	.	.	.
16.717	1.4155	2.05	.	.Q	.	V	.	.	.
16.733	1.4183	2.02	.	.Q	.	V	.	.	.
16.750	1.4210	1.98	.	.Q	.	V	.	.	.
16.767	1.4237	1.95	.	.Q	.	V	.	.	.
16.783	1.4264	1.92	.	.Q	.	V	.	.	.
16.800	1.4290	1.89	.	.Q	.	V	.	.	.
16.817	1.4316	1.87	.	.Q	.	V	.	.	.
16.833	1.4341	1.85	.	.Q	.	V	.	.	.
16.850	1.4366	1.82	.	.Q	.	V	.	.	.
16.867	1.4391	1.80	.	.Q	.	V	.	.	.
16.883	1.4415	1.78	.	.Q	.	V	.	.	.
16.900	1.4440	1.75	.	.Q	.	V	.	.	.
16.917	1.4463	1.73	.	.Q	.	V	.	.	.
16.933	1.4487	1.71	.	.Q	.	V	.	.	.
16.950	1.4510	1.69	.	.Q	.	V	.	.	.

16.967	1.4533	1.67	. Q	.	.	. V	.
16.983	1.4556	1.65	. Q	.	.	. V	.
17.000	1.4579	1.64	. Q	.	.	. V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	695.0
20%	170.0
30%	110.0
40%	75.0
50%	65.0
60%	50.0
70%	40.0
80%	30.0
90%	10.0

 FLOW PROCESS FROM NODE 205.00 TO NODE 205.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

 STREAM HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	5.0	10.0	15.0	20.0
15.800	0.9600	3.93	. Q	.	.V	.	.
15.817	0.9656	4.10	. Q	.	.V	.	.
15.833	0.9715	4.27	. Q	.	.V	.	.
15.850	0.9776	4.44	. Q	.	.V	.	.
15.867	0.9840	4.61	. Q	.	.V	.	.
15.883	0.9906	4.78	. Q	.	.V	.	.
15.900	0.9974	4.96	. Q	.	.V	.	.
15.917	1.0045	5.13	. Q	.	.V	.	.
15.933	1.0118	5.30	. Q	.	.V	.	.
15.950	1.0193	5.47	. Q	.	.V	.	.
15.967	1.0271	5.65	. Q	.	.V	.	.
15.983	1.0351	5.82	. Q	.	.V	.	.
16.000	1.0434	5.99	. Q	.	.V	.	.
16.017	1.0526	6.69	. Q	.	.V	.	.
16.033	1.0635	7.92	. Q	.	.V	.	.
16.050	1.0761	9.16	. Q	.	.V	.	.
16.067	1.0904	10.39	. Q	.	.V	.	.
16.083	1.1064	11.62	. Q	.	.V	.	.
16.100	1.1241	12.85	. Q	.	.V	.	.
16.117	1.1435	14.08	. Q	.	.V	.	.
16.133	1.1646	15.31	. Q	.	.V	.	.
16.150	1.1874	16.54	. Q	.	.V	.	.
16.167	1.2115	17.53	. Q	.	.V	.	.
16.183	1.2332	15.71	. Q	.	.V	.	.
16.200	1.2527	14.20	. Q	.	.V	.	.
16.217	1.2702	12.68	. Q	.	.V	.	.
16.233	1.2856	11.17	. Q	.	.V	.	.
16.250	1.2989	9.66	. Q	.	.V	.	.

16.267	1.3101	8.14	. Q	.	.V	.	.
16.283	1.3192	6.63	. Q	.	.V	.	.
16.300	1.3263	5.12	. Q	.	.V	.	.
16.317	1.3314	3.72	. Q	.	.V	.	.
16.333	1.3360	3.37	. Q	.	.V	.	.
16.350	1.3405	3.27	. Q	.	.V	.	.
16.367	1.3449	3.17	. Q	.	.V	.	.
16.383	1.3491	3.07	. Q	.	.V	.	.
16.400	1.3532	2.97	. Q	.	.V	.	.
16.417	1.3572	2.88	. Q	.	.V	.	.
16.433	1.3610	2.78	. Q	.	.V	.	.
16.450	1.3647	2.68	. Q	.	.V	.	.
16.467	1.3683	2.58	. Q	.	.V	.	.
16.483	1.3717	2.52	. Q	.	.V	.	.
16.500	1.3752	2.49	. Q	.	.V	.	.
16.517	1.3786	2.46	. Q	.	.V	.	.
16.533	1.3819	2.42	. Q	.	.V	.	.
16.550	1.3852	2.39	. Q	.	.V	.	.
16.567	1.3884	2.35	. Q	.	.V	.	.
16.583	1.3916	2.32	. Q	.	.V	.	.
16.600	1.3948	2.29	. Q	.	.V	.	.
16.617	1.3979	2.25	. Q	.	.V	.	.
16.633	1.4009	2.22	. Q	.	.V	.	.
16.650	1.4039	2.19	. Q	.	.V	.	.
16.667	1.4069	2.15	. Q	.	.V	.	.
16.683	1.4098	2.12	. Q	.	.V	.	.
16.700	1.4127	2.08	. Q	.	.V	.	.
16.717	1.4155	2.05	. Q	.	.V	.	.
16.733	1.4183	2.02	. Q	.	.V	.	.
16.750	1.4210	1.98	. Q	.	.V	.	.
16.767	1.4237	1.95	. Q	.	.V	.	.
16.783	1.4264	1.92	. Q	.	.V	.	.
16.800	1.4290	1.89	. Q	.	.V	.	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1009.0
10%	695.0
20%	170.0
30%	110.0
40%	75.0
50%	65.0
60%	50.0
70%	40.0
80%	30.0
90%	10.0

 END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
 (c) Copyright 1989-2011 Advanced Engineering Software (aes)
 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * THE VILLAGE - TTM 17439 *
- * 100-YR PROPOSED CONDITION - LINE A SINGLE AREA *
- * MCHANDOO *

FILE NAME: PROP00A.DAT
 TIME/DATE OF STUDY: 09:19 01/10/2013

The Small Area Unit Hydrograph Procedures in Section J of the Hydrology Manual provides estimates of runoff hydrograph and runoff volume for watersheds whose time of concentration is less than 25 minutes. The PROGRAM User should check the applicability of using the small area unit hydrograph procedures, and follow the guidelines in Sections J and K.5 in complex watershed modeling.

 FLOW PROCESS FROM NODE 100.00 TO NODE 106.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
 TOTAL CATCHMENT AREA(ACRES) = 3.50
 SOIL-LOSS RATE, Fm, (INCH/HR) = 0.059
 LOW LOSS FRACTION = 0.097
 TIME OF CONCENTRATION(MIN.) = 7.74
 SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
 USER SPECIFIED RAINFALL VALUES ARE USED:
 RETURN FREQUENCY(YEARS) = 100
 5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.52
 30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.09
 1-HOUR POINT RAINFALL VALUE(INCHES) = 1.45
 3-HOUR POINT RAINFALL VALUE(INCHES) = 2.43
 6-HOUR POINT RAINFALL VALUE(INCHES) = 3.36
 24-HOUR POINT RAINFALL VALUE(INCHES) = 5.63

 TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.35
 TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.30

=====

24 - HOUR STORM
 RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	3.8	7.5	11.3	15.0
14.000	0.4926	1.05	. Q	. V	.	.	.
14.017	0.4941	1.05	. Q	. V	.	.	.
14.033	0.4955	1.06	. Q	. V	.	.	.
14.050	0.4970	1.06	. Q	. V	.	.	.
14.067	0.4985	1.07	. Q	. V	.	.	.
14.083	0.5000	1.07	. Q	. V	.	.	.
14.100	0.5014	1.08	. Q	. V	.	.	.
14.117	0.5029	1.08	. Q	. V	.	.	.
14.133	0.5044	1.09	. Q	. V	.	.	.
14.150	0.5059	1.09	. Q	. V	.	.	.
14.167	0.5074	1.09	. Q	. V	.	.	.
14.183	0.5090	1.10	. Q	. V	.	.	.
14.200	0.5105	1.10	. Q	. V	.	.	.
14.217	0.5120	1.11	. Q	. V	.	.	.
14.233	0.5135	1.12	. Q	. V	.	.	.
14.250	0.5151	1.12	. Q	. V	.	.	.
14.267	0.5166	1.13	. Q	. V	.	.	.
14.283	0.5182	1.14	. Q	. V	.	.	.
14.300	0.5198	1.14	. Q	. V	.	.	.
14.317	0.5214	1.15	. Q	. V	.	.	.
14.333	0.5230	1.16	. Q	. V	.	.	.
14.350	0.5246	1.16	. Q	. V	.	.	.
14.367	0.5262	1.17	. Q	. V	.	.	.
14.383	0.5278	1.17	. Q	. V	.	.	.
14.400	0.5294	1.17	. Q	. V	.	.	.
14.417	0.5310	1.18	. Q	. V	.	.	.
14.433	0.5326	1.18	. Q	. V	.	.	.
14.450	0.5343	1.19	. Q	. V	.	.	.
14.467	0.5359	1.19	. Q	. V	.	.	.
14.483	0.5376	1.20	. Q	. V	.	.	.
14.500	0.5392	1.21	. Q	. V	.	.	.
14.517	0.5409	1.22	. Q	. V	.	.	.
14.533	0.5426	1.23	. Q	. V	.	.	.
14.550	0.5443	1.24	. Q	. V	.	.	.
14.567	0.5460	1.25	. Q	. V	.	.	.
14.583	0.5478	1.26	. Q	. V	.	.	.
14.600	0.5495	1.26	. Q	. V	.	.	.
14.617	0.5513	1.27	. Q	. V	.	.	.
14.633	0.5530	1.27	. Q	. V	.	.	.
14.650	0.5548	1.28	. Q	. V	.	.	.
14.667	0.5565	1.28	. Q	. V	.	.	.
14.683	0.5583	1.29	. Q	. V	.	.	.
14.700	0.5601	1.29	. Q	. V	.	.	.
14.717	0.5619	1.30	. Q	. V	.	.	.
14.733	0.5637	1.31	. Q	. V	.	.	.
14.750	0.5655	1.32	. Q	. V	.	.	.
14.767	0.5673	1.33	. Q	. V	.	.	.
14.783	0.5692	1.35	. Q	. V	.	.	.
14.800	0.5711	1.36	. Q	. V	.	.	.
14.817	0.5730	1.37	. Q	. V	.	.	.

14.833	0.5749	1.38	.	Q	.	V	.	.	.
14.850	0.5768	1.39	.	Q	.	V	.	.	.
14.867	0.5787	1.40	.	Q	.	V	.	.	.
14.883	0.5806	1.41	.	Q	.	V	.	.	.
14.900	0.5826	1.41	.	Q	.	V	.	.	.
14.917	0.5845	1.42	.	Q	.	V	.	.	.
14.933	0.5865	1.43	.	Q	.	V	.	.	.
14.950	0.5885	1.43	.	Q	.	V	.	.	.
14.967	0.5905	1.44	.	Q	.	V	.	.	.
14.983	0.5925	1.45	.	Q	.	V	.	.	.
15.000	0.5945	1.47	.	Q	.	V	.	.	.
15.017	0.5965	1.48	.	Q	.	V	.	.	.
15.033	0.5986	1.50	.	Q	.	V	.	.	.
15.050	0.6007	1.52	.	Q	.	V	.	.	.
15.067	0.6028	1.53	.	Q	.	V	.	.	.
15.083	0.6049	1.55	.	Q	.	V	.	.	.
15.100	0.6071	1.57	.	Q	.	V	.	.	.
15.117	0.6093	1.58	.	Q	.	V	.	.	.
15.133	0.6115	1.59	.	Q	.	V	.	.	.
15.150	0.6137	1.60	.	Q	.	V	.	.	.
15.167	0.6159	1.61	.	Q	.	V	.	.	.
15.183	0.6181	1.62	.	Q	.	V	.	.	.
15.200	0.6204	1.63	.	Q	.	V	.	.	.
15.217	0.6226	1.64	.	Q	.	V	.	.	.
15.233	0.6249	1.65	.	Q	.	V	.	.	.
15.250	0.6272	1.68	.	Q	.	V	.	.	.
15.267	0.6296	1.70	.	Q	.	V	.	.	.
15.283	0.6319	1.73	.	Q	.	V	.	.	.
15.300	0.6344	1.76	.	Q	.	V	.	.	.
15.317	0.6368	1.78	.	Q	.	V	.	.	.
15.333	0.6393	1.81	.	Q	.	V	.	.	.
15.350	0.6418	1.84	.	Q	.	V	.	.	.
15.367	0.6444	1.86	.	Q	.	V	.	.	.
15.383	0.6469	1.85	.	Q	.	V	.	.	.
15.400	0.6495	1.84	.	Q	.	V	.	.	.
15.417	0.6520	1.83	.	Q	.	V	.	.	.
15.433	0.6545	1.83	.	Q	.	V	.	.	.
15.450	0.6570	1.82	.	Q	.	V	.	.	.
15.467	0.6595	1.81	.	Q	.	V	.	.	.
15.483	0.6620	1.80	.	Q	.	V	.	.	.
15.500	0.6645	1.82	.	Q	.	V	.	.	.
15.517	0.6671	1.86	.	Q	.	V	.	.	.
15.533	0.6697	1.90	.	Q	.	V	.	.	.
15.550	0.6724	1.94	.	Q	.	V	.	.	.
15.567	0.6751	1.98	.	Q	.	V	.	.	.
15.583	0.6779	2.02	.	Q	.	V	.	.	.
15.600	0.6807	2.07	.	Q	.	V	.	.	.
15.617	0.6836	2.11	.	Q	.	V	.	.	.
15.633	0.6866	2.15	.	Q	.	V	.	.	.
15.650	0.6896	2.18	.	Q	.	V	.	.	.
15.667	0.6927	2.22	.	Q	.	V	.	.	.
15.683	0.6958	2.26	.	Q	.	V	.	.	.
15.700	0.6989	2.30	.	Q	.	V	.	.	.
15.717	0.7021	2.33	.	Q	.	V	.	.	.
15.733	0.7054	2.37	.	Q	.	V	.	.	.
15.750	0.7087	2.42	.	Q	.	.V	.	.	.
15.767	0.7122	2.55	.	Q	.	.V	.	.	.
15.783	0.7160	2.69	.	Q	.	.V	.	.	.
15.800	0.7199	2.83	.	Q	.	.V	.	.	.
15.817	0.7239	2.97	.	Q	.	.V	.	.	.
15.833	0.7282	3.12	.	Q	.	.V	.	.	.
15.850	0.7327	3.26	.	Q	.	.V	.	.	.
15.867	0.7374	3.40	.	Q	.	.V	.	.	.
15.883	0.7423	3.55	.	Q	.	.V	.	.	.

15.900	0.7474	3.72	.	Q	.	V	.	.	.
15.917	0.7528	3.90	.	Q	.	V	.	.	.
15.933	0.7584	4.07	.	Q	.	V	.	.	.
15.950	0.7642	4.25	.	.Q	.	V	.	.	.
15.967	0.7703	4.42	.	.Q	.	V	.	.	.
15.983	0.7767	4.59	.	.Q	.	V	.	.	.
16.000	0.7832	4.77	.	.Q	.	V	.	.	.
16.017	0.7908	5.51	.	Q	.	V	.	.	.
16.033	0.8002	6.83	.	.	Q	V	.	.	.
16.050	0.8114	8.14	.	.	.Q	V	.	.	.
16.067	0.8245	9.45	.	.	.VQ	.	.	.	.
16.083	0.8393	10.77	.	.	.	V	Q	.	.
16.100	0.8559	12.08	.	.	.	V	.	Q	.
16.117	0.8744	13.39	.	.	.	V	.	.	Q
16.133	0.8951	15.02	.	.	.	V	.	.	Q
16.150	0.9141	13.83	.	.	.	V	.	.	Q
16.167	0.9310	12.25	.	.	.	V	.	Q	.
16.183	0.9457	10.68	.	.	.	.	Q	.	.
16.200	0.9582	9.10	.	.	.	Q	V	.	.
16.217	0.9686	7.53	.	.	Q	.	V	.	.
16.233	0.9768	5.95	.	.	Q	.	V	.	.
16.250	0.9828	4.38	.	.	.Q	.	V	.	.
16.267	0.9870	3.00	.	.	Q	.	V	.	.
16.283	0.9907	2.71	.	.	Q	.	V	.	.
16.300	0.9943	2.59	.	.	Q	.	V	.	.
16.317	0.9977	2.47	.	.	Q	.	V	.	.
16.333	1.0009	2.35	.	.	Q	.	V	.	.
16.350	1.0040	2.23	.	.	Q	.	V	.	.
16.367	1.0069	2.11	.	.	Q	.	V	.	.
16.383	1.0096	1.99	.	.	Q	.	V	.	.
16.400	1.0122	1.90	.	.	Q	.	V	.	.
16.417	1.0148	1.88	.	Q	.	V	.	.	.
16.433	1.0174	1.85	.	Q	.	V	.	.	.
16.450	1.0199	1.83	.	Q	.	V	.	.	.
16.467	1.0224	1.81	.	Q	.	V	.	.	.
16.483	1.0249	1.79	.	Q	.	V	.	.	.
16.500	1.0273	1.77	.	Q	.	V	.	.	.
16.517	1.0297	1.75	.	Q	.	V	.	.	.
16.533	1.0321	1.73	.	Q	.	V	.	.	.
16.550	1.0344	1.70	.	Q	.	V	.	.	.
16.567	1.0367	1.66	.	Q	.	V	.	.	.
16.583	1.0390	1.63	.	Q	.	V	.	.	.
16.600	1.0412	1.60	.	Q	.	V	.	.	.
16.617	1.0434	1.57	.	Q	.	.	V	.	.
16.633	1.0455	1.54	.	Q	.	.	V	.	.
16.650	1.0476	1.51	.	Q	.	.	V	.	.
16.667	1.0496	1.49	.	Q	.	.	V	.	.
16.683	1.0516	1.47	.	Q	.	.	V	.	.
16.700	1.0536	1.45	.	Q	.	.	V	.	.
16.717	1.0556	1.43	.	Q	.	.	V	.	.
16.733	1.0575	1.40	.	Q	.	.	V	.	.
16.750	1.0594	1.38	.	Q	.	.	V	.	.
16.767	1.0613	1.36	.	Q	.	.	V	.	.
16.783	1.0632	1.34	.	Q	.	.	V	.	.
16.800	1.0650	1.33	.	Q	.	.	V	.	.
16.817	1.0668	1.31	.	Q	.	.	V	.	.
16.833	1.0686	1.30	.	Q	.	.	V	.	.
16.850	1.0703	1.28	.	Q	.	.	V	.	.
16.867	1.0721	1.26	.	Q	.	.	V	.	.
16.883	1.0738	1.25	.	Q	.	.	V	.	.
16.900	1.0755	1.23	.	Q	.	.	V	.	.
16.917	1.0772	1.22	.	Q	.	.	V	.	.
16.933	1.0788	1.21	.	Q	.	.	V	.	.
16.950	1.0805	1.19	.	Q	.	.	V	.	.

16.967	1.0821	1.18	. Q	.	.	. V	.
16.983	1.0837	1.17	. Q	.	.	. V	.
17.000	1.0853	1.16	. Q	.	.	. V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
=====	=====
0%	1021.0
10%	485.0
20%	130.0
30%	80.0
40%	60.0
50%	55.0
60%	45.0
70%	35.0
80%	25.0
90%	10.0
=====	=====

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
 (c) Copyright 1989-2011 Advanced Engineering Software (aes)
 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

* THE VILLAGE - TTM 17439 *
 * 100-YR PROPOSED CONDITION - LINE N SINGLE AREA *
 * MCHANDOO *

FILE NAME: PROP00N.DAT

TIME/DATE OF STUDY: 13:40 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J of the Hydrology Manual provides estimates of runoff hydrograph and runoff volume for watersheds whose time of concentration is less than 25 minutes. The PROGRAM User should check the applicability of using the small area unit hydrograph procedures, and follow the guidelines in Sections J and K.5 in complex watershed modeling.

FLOW PROCESS FROM NODE 202.00 TO NODE 208.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

=====

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 5.80

SOIL-LOSS RATE, Fm, (INCH/HR) = 0.056

LOW LOSS FRACTION = 0.088

TIME OF CONCENTRATION(MIN.) = 8.47

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

USER SPECIFIED RAINFALL VALUES ARE USED:

RETURN FREQUENCY(YEARS) = 100

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.52

30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.09

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.45

3-HOUR POINT RAINFALL VALUE(INCHES) = 2.43

6-HOUR POINT RAINFALL VALUE(INCHES) = 3.36

24-HOUR POINT RAINFALL VALUE(INCHES) = 5.63

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 2.25

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.47

=====

24 - HOUR STORM
 RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)

(Notes: Time indicated is at END of Each Unit Intervals.

Peak 5-minute rainfall intensity is modeled as

a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	5.9	11.8	17.7	23.6
14.000	0.8230	1.74	. Q	. V	.	.	.
14.017	0.8254	1.74	. Q	. V	.	.	.
14.033	0.8278	1.75	. Q	. V	.	.	.
14.050	0.8302	1.76	. Q	. V	.	.	.
14.067	0.8326	1.77	. Q	. V	.	.	.
14.083	0.8351	1.78	. Q	. V	.	.	.
14.100	0.8376	1.80	. Q	. V	.	.	.
14.117	0.8401	1.81	. Q	. V	.	.	.
14.133	0.8426	1.82	. Q	. V	.	.	.
14.150	0.8451	1.83	. Q	. V	.	.	.
14.167	0.8476	1.84	. Q	. V	.	.	.
14.183	0.8502	1.85	. Q	. V	.	.	.
14.200	0.8527	1.86	. Q	. V	.	.	.
14.217	0.8553	1.86	. Q	. V	.	.	.
14.233	0.8579	1.87	. Q	. V	.	.	.
14.250	0.8605	1.87	. Q	. V	.	.	.
14.267	0.8631	1.88	. Q	. V	.	.	.
14.283	0.8657	1.89	. Q	. V	.	.	.
14.300	0.8683	1.89	. Q	. V	.	.	.
14.317	0.8709	1.90	. Q	. V	.	.	.
14.333	0.8735	1.91	. Q	. V	.	.	.
14.350	0.8762	1.93	. Q	. V	.	.	.
14.367	0.8788	1.94	. Q	. V	.	.	.
14.383	0.8815	1.95	. Q	. V	.	.	.
14.400	0.8842	1.96	. Q	. V	.	.	.
14.417	0.8869	1.98	. Q	. V	.	.	.
14.433	0.8897	1.99	. Q	. V	.	.	.
14.450	0.8925	2.00	. Q	. V	.	.	.
14.467	0.8952	2.01	. Q	. V	.	.	.
14.483	0.8980	2.02	. Q	. V	.	.	.
14.500	0.9008	2.03	. Q	. V	.	.	.
14.517	0.9036	2.04	. Q	. V	.	.	.
14.533	0.9064	2.04	. Q	. V	.	.	.
14.550	0.9093	2.05	. Q	. V	.	.	.
14.567	0.9121	2.06	. Q	. V	.	.	.
14.583	0.9149	2.07	. Q	. V	.	.	.
14.600	0.9178	2.08	. Q	. V	.	.	.
14.617	0.9207	2.09	. Q	. V	.	.	.
14.633	0.9236	2.11	. Q	. V	.	.	.
14.650	0.9265	2.13	. Q	. V	.	.	.
14.667	0.9295	2.15	. Q	. V	.	.	.
14.683	0.9325	2.16	. Q	. V	.	.	.
14.700	0.9355	2.18	. Q	. V	.	.	.
14.717	0.9385	2.20	. Q	. V	.	.	.
14.733	0.9415	2.21	. Q	. V	.	.	.
14.750	0.9446	2.23	. Q	. V	.	.	.
14.767	0.9477	2.24	. Q	. V	.	.	.
14.783	0.9508	2.25	. Q	. V	.	.	.
14.800	0.9539	2.26	. Q	. V	.	.	.
14.817	0.9570	2.27	. Q	. V	.	.	.

14.833	0.9602	2.28	.	Q	.	V	.	.	.
14.850	0.9633	2.29	.	Q	.	V	.	.	.
14.867	0.9665	2.30	.	Q	.	V	.	.	.
14.883	0.9697	2.31	.	Q	.	V	.	.	.
14.900	0.9729	2.34	.	Q	.	V	.	.	.
14.917	0.9761	2.36	.	Q	.	V	.	.	.
14.933	0.9794	2.38	.	Q	.	V	.	.	.
14.950	0.9827	2.41	.	Q	.	V	.	.	.
14.967	0.9861	2.43	.	Q	.	V	.	.	.
14.983	0.9895	2.46	.	Q	.	V	.	.	.
15.000	0.9929	2.48	.	Q	.	V	.	.	.
15.017	0.9963	2.50	.	Q	.	V	.	.	.
15.033	0.9998	2.52	.	Q	.	V	.	.	.
15.050	1.0033	2.54	.	Q	.	V	.	.	.
15.067	1.0068	2.55	.	Q	.	V	.	.	.
15.083	1.0103	2.57	.	Q	.	V	.	.	.
15.100	1.0139	2.58	.	Q	.	V	.	.	.
15.117	1.0175	2.59	.	Q	.	V	.	.	.
15.133	1.0211	2.61	.	Q	.	V	.	.	.
15.150	1.0247	2.62	.	Q	.	V	.	.	.
15.167	1.0283	2.65	.	Q	.	V	.	.	.
15.183	1.0320	2.68	.	Q	.	V	.	.	.
15.200	1.0358	2.72	.	Q	.	V	.	.	.
15.217	1.0396	2.76	.	Q	.	V	.	.	.
15.233	1.0434	2.79	.	Q	.	V	.	.	.
15.250	1.0473	2.83	.	Q	.	V	.	.	.
15.267	1.0513	2.87	.	Q	.	V	.	.	.
15.283	1.0553	2.90	.	Q	.	V	.	.	.
15.300	1.0593	2.94	.	Q	.	V	.	.	.
15.317	1.0634	2.96	.	Q	.	V	.	.	.
15.333	1.0675	2.99	.	Q	.	V	.	.	.
15.350	1.0716	3.01	.	Q	.	V	.	.	.
15.367	1.0758	3.03	.	Q	.	V	.	.	.
15.383	1.0800	3.05	.	Q	.	V	.	.	.
15.400	1.0842	3.07	.	Q	.	V	.	.	.
15.417	1.0885	3.09	.	Q	.	V	.	.	.
15.433	1.0928	3.11	.	Q	.	V	.	.	.
15.450	1.0971	3.13	.	Q	.	V	.	.	.
15.467	1.1014	3.16	.	Q	.	V	.	.	.
15.483	1.1058	3.18	.	Q	.	V	.	.	.
15.500	1.1102	3.21	.	Q	.	V	.	.	.
15.517	1.1147	3.23	.	Q	.	V	.	.	.
15.533	1.1192	3.25	.	Q	.	V	.	.	.
15.550	1.1237	3.28	.	Q	.	V	.	.	.
15.567	1.1282	3.30	.	Q	.	V	.	.	.
15.583	1.1328	3.33	.	Q	.	V	.	.	.
15.600	1.1375	3.38	.	Q	.	V	.	.	.
15.617	1.1422	3.43	.	Q	.	V	.	.	.
15.633	1.1470	3.49	.	Q	.	V	.	.	.
15.650	1.1519	3.54	.	Q	.	V	.	.	.
15.667	1.1568	3.59	.	Q	.	V	.	.	.
15.683	1.1619	3.65	.	Q	.	V	.	.	.
15.700	1.1670	3.70	.	Q	.	V	.	.	.
15.717	1.1721	3.76	.	Q	.	V	.	.	.
15.733	1.1775	3.88	.	Q	.	V	.	.	.
15.750	1.1831	4.08	.	Q	.	.V	.	.	.
15.767	1.1890	4.28	.	Q	.	.V	.	.	.
15.783	1.1952	4.49	.	Q	.	.V	.	.	.
15.800	1.2016	4.69	.	Q	.	.V	.	.	.
15.817	1.2084	4.89	.	Q	.	.V	.	.	.
15.833	1.2154	5.10	.	Q	.	.V	.	.	.
15.850	1.2227	5.30	.	Q	.	.V	.	.	.
15.867	1.2303	5.51	.	Q	.	.V	.	.	.
15.883	1.2382	5.75	.	Q	.	.V	.	.	.

15.900	1.2465	6.00	.	Q	.	V	.	.	.
15.917	1.2511	6.25	.	Q	.	V	.	.	.
15.933	1.2640	6.51	.	.Q	.	V	.	.	.
15.950	1.2734	6.76	.	.Q	.	V	.	.	.
15.967	1.2830	7.01	.	.Q	.	V	.	.	.
15.983	1.2930	7.26	.	.Q	.	V	.	.	.
16.000	1.3033	7.51	.	.Q	.	V	.	.	.
16.017	1.3152	8.58	.	.Q	.	V	.	.	.
16.033	1.3296	10.46	.	.	Q	V	.	.	.
16.050	1.3466	12.35	.	.	Q	V	.	.	.
16.067	1.3662	14.24	.	.	.Q	.	.	.	.
16.083	1.3884	16.12	.	.	.V	Q	.	.	.
16.100	1.4132	18.01	.	.	.V	Q	.	.	.
16.117	1.4406	19.90	.	.	.V	.	Q	.	.
16.133	1.4706	21.78	.	.	.V	.	Q	.	.
16.150	1.5031	23.61	.	.	.V	.	Q	.	Q
16.167	1.5324	21.28	.	.	.V	.	Q	.	.
16.183	1.5586	19.02	.	.	.V	.	Q	.	.
16.200	1.5817	16.76	.	.	.Q	.	.	.	.
16.217	1.6017	14.49	.	.	Q	V	.	.	.
16.233	1.6185	12.23	.	.	Q	V	.	.	.
16.250	1.6323	9.97	.	.	Q	.	V	.	.
16.267	1.6429	7.71	.	.	Q	.	V	.	.
16.283	1.6504	5.45	.	Q	.	V	.	.	.
16.300	1.6564	4.35	.	Q	.	V	.	.	.
16.317	1.6622	4.18	.	Q	.	V	.	.	.
16.333	1.6677	4.01	.	Q	.	V	.	.	.
16.350	1.6730	3.84	.	Q	.	V	.	.	.
16.367	1.6780	3.66	.	Q	.	V	.	.	.
16.383	1.6828	3.49	.	Q	.	V	.	.	.
16.400	1.6874	3.32	.	Q	.	V	.	.	.
16.417	1.6917	3.15	.	Q	.	V	.	.	.
16.433	1.6959	3.00	.	Q	.	V	.	.	.
16.450	1.6999	2.96	.	Q	.	V	.	.	.
16.467	1.7040	2.94	.	Q	.	V	.	.	.
16.483	1.7080	2.91	.	Q	.	V	.	.	.
16.500	1.7120	2.89	.	Q	.	V	.	.	.
16.517	1.7159	2.86	.	Q	.	V	.	.	.
16.533	1.7198	2.84	.	Q	.	V	.	.	.
16.550	1.7237	2.81	.	Q	.	V	.	.	.
16.567	1.7276	2.79	.	Q	.	V	.	.	.
16.583	1.7313	2.75	.	Q	.	V	.	.	.
16.600	1.7351	2.71	.	Q	.	V	.	.	.
16.617	1.7387	2.66	.	Q	.	V	.	.	.
16.633	1.7423	2.62	.	Q	.	.V	.	.	.
16.650	1.7459	2.57	.	Q	.	.V	.	.	.
16.667	1.7494	2.53	.	Q	.	.V	.	.	.
16.683	1.7528	2.48	.	Q	.	.V	.	.	.
16.700	1.7562	2.44	.	Q	.	.V	.	.	.
16.717	1.7595	2.40	.	Q	.	.V	.	.	.
16.733	1.7627	2.37	.	Q	.	.V	.	.	.
16.750	1.7659	2.34	.	Q	.	.V	.	.	.
16.767	1.7691	2.31	.	Q	.	.V	.	.	.
16.783	1.7722	2.27	.	Q	.	.V	.	.	.
16.800	1.7753	2.24	.	Q	.	.V	.	.	.
16.817	1.7784	2.21	.	Q	.	.V	.	.	.
16.833	1.7814	2.18	.	Q	.	.V	.	.	.
16.850	1.7844	2.15	.	Q	.	.V	.	.	.
16.867	1.7873	2.13	.	Q	.	.V	.	.	.
16.883	1.7902	2.10	.	Q	.	.V	.	.	.
16.900	1.7930	2.08	.	Q	.	.V	.	.	.
16.917	1.7959	2.06	.	Q	.	.V	.	.	.
16.933	1.7987	2.04	.	Q	.	.V	.	.	.
16.950	1.8015	2.01	.	Q	.	.V	.	.	.

16.967	1.8042	1.99	.	Q	.	.	.	V	.
16.983	1.8069	1.97	.	Q	.	.	.	V	.
17.000	1.8096	1.95	.	Q	.	.	.	V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
=====	=====
0%	1021.0
10%	545.0
20%	145.0
30%	90.0
40%	70.0
50%	60.0
60%	50.0
70%	35.0
80%	25.0
90%	15.0
=====	=====

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
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 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * THE VILLAGE - TTM 17439 *
- * 25-YR PROPOSED CONDITION - LINE A *
- * MCHANDOO *

FILE NAME: PROP25A.DAT
 TIME/DATE OF STUDY: 09:15 01/10/2013

The Small Area Unit Hydrograph Procedures in Section J of the Hydrology Manual provides estimates of runoff hydrograph and runoff volume for watersheds whose time of concentration is less than 25 minutes. The PROGRAM User should check the applicability of using the small area unit hydrograph procedures, and follow the guidelines in Sections J and K.5 in complex watershed modeling.

 FLOW PROCESS FROM NODE 100.00 TO NODE 106.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

- RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
- TOTAL CATCHMENT AREA(ACRES) = 3.50
- SOIL-LOSS RATE, Fm, (INCH/HR) = 0.059
- LOW LOSS FRACTION = 0.193
- TIME OF CONCENTRATION(MIN.) = 7.85
- SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
- USER SPECIFIED RAINFALL VALUES ARE USED:
- RETURN FREQUENCY(YEARS) = 25
- 5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.40
- 30-MINUTE POINT RAINFALL VALUE(INCHES) = 0.87
- 1-HOUR POINT RAINFALL VALUE(INCHES) = 1.15
- 3-HOUR POINT RAINFALL VALUE(INCHES) = 1.94
- 6-HOUR POINT RAINFALL VALUE(INCHES) = 2.71
- 24-HOUR POINT RAINFALL VALUE(INCHES) = 4.49

 TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.00
 TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.31

=====

24 - HOUR STORM
 RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	2.9	5.8	8.6	11.5
14.000	0.3499	0.77	. Q	. V	.	.	.
14.017	0.3509	0.78	. Q	. V	.	.	.
14.033	0.3520	0.78	. Q	. V	.	.	.
14.050	0.3531	0.78	. Q	. V	.	.	.
14.067	0.3542	0.79	. Q	. V	.	.	.
14.083	0.3552	0.79	. Q	. V	.	.	.
14.100	0.3563	0.79	. Q	. V	.	.	.
14.117	0.3574	0.79	. Q	. V	.	.	.
14.133	0.3585	0.79	. Q	. V	.	.	.
14.150	0.3596	0.79	. Q	. V	.	.	.
14.167	0.3607	0.79	. Q	. V	.	.	.
14.183	0.3618	0.80	. Q	. V	.	.	.
14.200	0.3629	0.80	. Q	. V	.	.	.
14.217	0.3640	0.81	. Q	. V	.	.	.
14.233	0.3651	0.82	. Q	. V	.	.	.
14.250	0.3663	0.82	. Q	. V	.	.	.
14.267	0.3674	0.83	. Q	. V	.	.	.
14.283	0.3686	0.83	. Q	. V	.	.	.
14.300	0.3697	0.84	. Q	. V	.	.	.
14.317	0.3709	0.84	. Q	. V	.	.	.
14.333	0.3720	0.85	. Q	. V	.	.	.
14.350	0.3732	0.85	. Q	. V	.	.	.
14.367	0.3744	0.85	. Q	. V	.	.	.
14.383	0.3756	0.86	. Q	. V	.	.	.
14.400	0.3768	0.86	. Q	. V	.	.	.
14.417	0.3780	0.87	. Q	. V	.	.	.
14.433	0.3791	0.87	. Q	. V	.	.	.
14.450	0.3804	0.88	. Q	. V	.	.	.
14.467	0.3816	0.88	. Q	. V	.	.	.
14.483	0.3828	0.89	. Q	. V	.	.	.
14.500	0.3840	0.90	. Q	. V	.	.	.
14.517	0.3853	0.91	. Q	. V	.	.	.
14.533	0.3865	0.91	. Q	. V	.	.	.
14.550	0.3878	0.92	. Q	. V	.	.	.
14.567	0.3891	0.93	. Q	. V	.	.	.
14.583	0.3904	0.94	. Q	. V	.	.	.
14.600	0.3917	0.94	. Q	. V	.	.	.
14.617	0.3930	0.94	. Q	. V	.	.	.
14.633	0.3943	0.95	. Q	. V	.	.	.
14.650	0.3956	0.95	. Q	. V	.	.	.
14.667	0.3969	0.96	. Q	. V	.	.	.
14.683	0.3982	0.96	. Q	. V	.	.	.
14.700	0.3996	0.97	. Q	. V	.	.	.
14.717	0.4009	0.98	. Q	. V	.	.	.
14.733	0.4023	0.99	. Q	. V	.	.	.
14.750	0.4037	1.00	. Q	. V	.	.	.
14.767	0.4050	1.01	. Q	. V	.	.	.
14.783	0.4064	1.02	. Q	. V	.	.	.
14.800	0.4079	1.03	. Q	. V	.	.	.
14.817	0.4093	1.04	. Q	. V	.	.	.

14.833	0.4107	1.05	.	Q	.	V	.	.	.
14.850	0.4122	1.05	.	Q	.	V	.	.	.
14.867	0.4136	1.06	.	Q	.	V	.	.	.
14.883	0.4151	1.07	.	Q	.	V	.	.	.
14.900	0.4166	1.07	.	Q	.	V	.	.	.
14.917	0.4181	1.08	.	Q	.	V	.	.	.
14.933	0.4196	1.08	.	Q	.	V	.	.	.
14.950	0.4211	1.09	.	Q	.	V	.	.	.
14.967	0.4226	1.10	.	Q	.	V	.	.	.
14.983	0.4241	1.11	.	Q	.	V	.	.	.
15.000	0.4257	1.13	.	Q	.	V	.	.	.
15.017	0.4272	1.14	.	Q	.	V	.	.	.
15.033	0.4288	1.16	.	Q	.	V	.	.	.
15.050	0.4304	1.17	.	Q	.	V	.	.	.
15.067	0.4321	1.18	.	Q	.	V	.	.	.
15.083	0.4337	1.20	.	Q	.	V	.	.	.
15.100	0.4354	1.21	.	Q	.	V	.	.	.
15.117	0.4371	1.22	.	Q	.	V	.	.	.
15.133	0.4388	1.23	.	Q	.	V	.	.	.
15.150	0.4405	1.24	.	Q	.	V	.	.	.
15.167	0.4422	1.25	.	Q	.	V	.	.	.
15.183	0.4439	1.25	.	Q	.	V	.	.	.
15.200	0.4456	1.26	.	Q	.	V	.	.	.
15.217	0.4474	1.27	.	Q	.	V	.	.	.
15.233	0.4492	1.29	.	Q	.	V	.	.	.
15.250	0.4510	1.31	.	Q	.	V	.	.	.
15.267	0.4528	1.33	.	Q	.	V	.	.	.
15.283	0.4547	1.35	.	Q	.	V	.	.	.
15.300	0.4566	1.37	.	Q	.	V	.	.	.
15.317	0.4585	1.40	.	Q	.	V	.	.	.
15.333	0.4604	1.42	.	Q	.	V	.	.	.
15.350	0.4624	1.44	.	Q	.	V	.	.	.
15.367	0.4644	1.44	.	Q	.	V	.	.	.
15.383	0.4664	1.43	.	Q	.	V	.	.	.
15.400	0.4683	1.42	.	Q	.	V	.	.	.
15.417	0.4703	1.42	.	Q	.	V	.	.	.
15.433	0.4722	1.41	.	Q	.	V	.	.	.
15.450	0.4742	1.40	.	Q	.	V	.	.	.
15.467	0.4761	1.39	.	Q	.	V	.	.	.
15.483	0.4780	1.39	.	Q	.	V	.	.	.
15.500	0.4799	1.41	.	Q	.	V	.	.	.
15.517	0.4819	1.43	.	Q	.	V	.	.	.
15.533	0.4839	1.46	.	Q	.	V	.	.	.
15.550	0.4860	1.49	.	Q	.	V	.	.	.
15.567	0.4881	1.51	.	Q	.	V	.	.	.
15.583	0.4902	1.54	.	Q	.	V	.	.	.
15.600	0.4923	1.57	.	Q	.	V	.	.	.
15.617	0.4945	1.59	.	Q	.	V	.	.	.
15.633	0.4968	1.62	.	Q	.	V	.	.	.
15.650	0.4990	1.65	.	Q	.	V	.	.	.
15.667	0.5014	1.68	.	Q	.	V	.	.	.
15.683	0.5037	1.71	.	Q	.	V	.	.	.
15.700	0.5061	1.74	.	Q	.	V	.	.	.
15.717	0.5085	1.77	.	Q	.	V	.	.	.
15.733	0.5110	1.80	.	Q	.	V	.	.	.
15.750	0.5136	1.85	.	Q	.	V	.	.	.
15.767	0.5163	1.98	.	Q	.	V	.	.	.
15.783	0.5192	2.11	.	Q	.	V	.	.	.
15.800	0.5223	2.24	.	Q	.	V	.	.	.
15.817	0.5255	2.37	.	Q	.	.V	.	.	.
15.833	0.5290	2.51	.	Q	.	.V	.	.	.
15.850	0.5326	2.64	.	Q	.	.V	.	.	.
15.867	0.5364	2.77	.	Q	.	.V	.	.	.
15.883	0.5404	2.90	.	Q	.	.V	.	.	.

15.900	0.5446	3.04	.	Q	.	.V	.	.	.
15.917	0.5490	3.17	.	.Q	.	.V	.	.	.
15.933	0.5536	3.31	.	.Q	.	.V	.	.	.
15.950	0.5583	3.45	.	.Q	.	.V	.	.	.
15.967	0.5632	3.58	.	.Q	.	.V	.	.	.
15.983	0.5684	3.72	.	.Q	.	.V	.	.	.
16.000	0.5737	3.85	.	.Q	.	.V	.	.	.
16.017	0.5797	4.41	.	.Q	.	.V	.	.	.
16.033	0.5871	5.37	.	.Q	.	.V	.	.	.
16.050	0.5959	6.34	.	.	.	.VQ	.	.	.
16.067	0.6059	7.31	.	.	.	.VQ	.	.	.
16.083	0.6173	8.28	.	.	.	.V	.Q	.	.
16.100	0.6301	9.25	.	.	.	.V	.	.Q	.
16.117	0.6442	10.22	.	.	.	.V	.	.	.Q
16.133	0.6600	11.53	.	.	.	.V	.	.	.Q
16.150	0.6749	10.76	.	.	.	.V	.	.	.Q
16.167	0.6881	9.58	.	.	.	.V	.	.Q	.
16.183	0.6996	8.41	.	.	.	.VQ	.	.	.
16.200	0.7096	7.23	.	.	.	.Q	.V	.	.
16.217	0.7179	6.05	.	.	.	.Q	.V	.	.
16.233	0.7247	4.88	.	.	.Q	.	.V	.	.
16.250	0.7298	3.70	.	.	.Q	.	.V	.	.
16.267	0.7333	2.57	.	.	.Q	.	.V	.	.
16.283	0.7363	2.20	.	.	.Q	.	.V	.	.
16.300	0.7392	2.09	.	.	.Q	.	.V	.	.
16.317	0.7419	1.98	.	.	.Q	.	.V	.	.
16.333	0.7445	1.87	.	.	.Q	.	.V	.	.
16.350	0.7469	1.76	.	.	.Q	.	.V	.	.
16.367	0.7492	1.65	.	.	.Q	.	.V	.	.
16.383	0.7513	1.54	.	.	.Q	.	.V	.	.
16.400	0.7533	1.44	.	.Q	.	.	.V	.	.
16.417	0.7553	1.41	.	.Q	.	.	.V	.	.
16.433	0.7572	1.41	.	.Q	.	.	.V	.	.
16.450	0.7591	1.40	.	.Q	.	.	.V	.	.
16.467	0.7610	1.39	.	.Q	.	.	.V	.	.
16.483	0.7629	1.38	.	.Q	.	.	.V	.	.
16.500	0.7648	1.37	.	.Q	.	.	.V	.	.
16.517	0.7667	1.36	.	.Q	.	.	.V	.	.
16.533	0.7685	1.35	.	.Q	.	.	.V	.	.
16.550	0.7704	1.32	.	.Q	.	.	.V	.	.
16.567	0.7722	1.30	.	.Q	.	.	.V	.	.
16.583	0.7739	1.27	.	.Q	.	.	.V	.	.
16.600	0.7756	1.25	.	.Q	.	.	.V	.	.
16.617	0.7773	1.22	.	.Q	.	.	.V	.	.
16.633	0.7789	1.19	.	.Q	.	.	.V	.	.
16.650	0.7806	1.17	.	.Q	.	.	.V	.	.
16.667	0.7821	1.14	.	.Q	.	.	.V	.	.
16.683	0.7837	1.12	.	.Q	.	.	.V	.	.
16.700	0.7852	1.11	.	.Q	.	.	.V	.	.
16.717	0.7867	1.09	.	.Q	.	.	.V	.	.
16.733	0.7882	1.07	.	.Q	.	.	.V	.	.
16.750	0.7896	1.05	.	.Q	.	.	.V	.	.
16.767	0.7910	1.03	.	.Q	.	.	.V	.	.
16.783	0.7924	1.02	.	.Q	.	.	.V	.	.
16.800	0.7938	1.00	.	.Q	.	.	.V	.	.
16.817	0.7952	0.99	.	.Q	.	.	.V	.	.
16.833	0.7965	0.97	.	.Q	.	.	.V	.	.
16.850	0.7978	0.96	.	.Q	.	.	.V	.	.
16.867	0.7991	0.95	.	.Q	.	.	.V	.	.
16.883	0.8004	0.93	.	.Q	.	.	.V	.	.
16.900	0.8017	0.92	.	.Q	.	.	.V	.	.
16.917	0.8029	0.91	.	.Q	.	.	.V	.	.
16.933	0.8042	0.89	.	.Q	.	.	.V	.	.
16.950	0.8054	0.88	.	.Q	.	.	.V	.	.

```
16.967 0.8066 0.87 . Q . . . V .  
16.983 0.8078 0.86 . Q . . . V .  
17.000 0.8089 0.85 . Q . . . V .
```

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	490.0
20%	140.0
30%	90.0
40%	65.0
50%	55.0
60%	45.0
70%	35.0
80%	25.0
90%	10.0

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
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Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * THE VILLAGE - TTM 17439
* 25-YR PROPOSED CONDITION - LINE N SINGLE AREA
* MCHANDOO

FILE NAME: PROP25N.DAT
TIME/DATE OF STUDY: 13:41 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J
of the Hydrology Manual provides estimates of runoff
hydrograph and runoff volume for watersheds whose time of
concentration is less than 25 minutes. The PROGRAM User
should check the applicability of using the small area unit
hydrograph procedures, and follow the guidelines in
Sections J and K.5 in complex watershed modeling.

FLOW PROCESS FROM NODE 202.00 TO NODE 208.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
TOTAL CATCHMENT AREA(ACRES) = 5.80
SOIL-LOSS RATE, Fm, (INCH/HR) = 0.056
LOW LOSS FRACTION = 0.186
TIME OF CONCENTRATION(MIN.) = 8.65
SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
USER SPECIFIED RAINFALL VALUES ARE USED:
RETURN FREQUENCY(YEARS) = 25
5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.40
30-MINUTE POINT RAINFALL VALUE(INCHES) = 0.87
1-HOUR POINT RAINFALL VALUE(INCHES) = 1.15
3-HOUR POINT RAINFALL VALUE(INCHES) = 1.94
6-HOUR POINT RAINFALL VALUE(INCHES) = 2.71
24-HOUR POINT RAINFALL VALUE(INCHES) = 4.49

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.66
TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.51

=====

24 - HOUR STORM
RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

Table with columns: TIME(HRS), VOLUME(AF), Q(CFS), and rainfall intensity values for 0.5, 4.5, 9.0, 13.6, and 18.1 minutes.

14.833	0.6873	1.71	.	Q	.	V	.	.	.
14.850	0.6897	1.72	.	Q	.	V	.	.	.
14.867	0.6921	1.74	.	Q	.	V	.	.	.
14.883	0.6945	1.76	.	Q	.	V	.	.	.
14.900	0.6969	1.78	.	Q	.	V	.	.	.
14.917	0.6994	1.80	.	Q	.	V	.	.	.
14.933	0.7019	1.82	.	Q	.	V	.	.	.
14.950	0.7044	1.84	.	Q	.	V	.	.	.
14.967	0.7070	1.86	.	Q	.	V	.	.	.
14.983	0.7096	1.88	.	Q	.	V	.	.	.
15.000	0.7122	1.90	.	Q	.	V	.	.	.
15.017	0.7149	1.91	.	Q	.	V	.	.	.
15.033	0.7175	1.93	.	Q	.	V	.	.	.
15.050	0.7202	1.94	.	Q	.	V	.	.	.
15.067	0.7229	1.95	.	Q	.	V	.	.	.
15.083	0.7256	1.96	.	Q	.	V	.	.	.
15.100	0.7283	1.98	.	Q	.	V	.	.	.
15.117	0.7310	1.99	.	Q	.	V	.	.	.
15.133	0.7338	2.00	.	Q	.	V	.	.	.
15.150	0.7366	2.02	.	Q	.	V	.	.	.
15.167	0.7394	2.05	.	Q	.	V	.	.	.
15.183	0.7423	2.08	.	Q	.	V	.	.	.
15.200	0.7452	2.11	.	Q	.	V	.	.	.
15.217	0.7481	2.14	.	Q	.	V	.	.	.
15.233	0.7511	2.18	.	Q	.	V	.	.	.
15.250	0.7542	2.21	.	Q	.	V	.	.	.
15.267	0.7572	2.24	.	Q	.	V	.	.	.
15.283	0.7604	2.27	.	Q	.	V	.	.	.
15.300	0.7635	2.29	.	Q	.	V	.	.	.
15.317	0.7667	2.31	.	Q	.	V	.	.	.
15.333	0.7699	2.33	.	Q	.	V	.	.	.
15.350	0.7732	2.35	.	Q	.	V	.	.	.
15.367	0.7764	2.37	.	Q	.	V	.	.	.
15.383	0.7797	2.39	.	Q	.	V	.	.	.
15.400	0.7831	2.41	.	Q	.	V	.	.	.
15.417	0.7864	2.43	.	Q	.	V	.	.	.
15.433	0.7898	2.45	.	Q	.	V	.	.	.
15.450	0.7932	2.46	.	Q	.	V	.	.	.
15.467	0.7966	2.46	.	Q	.	V	.	.	.
15.483	0.8000	2.46	.	Q	.	V	.	.	.
15.500	0.8034	2.47	.	Q	.	V	.	.	.
15.517	0.8068	2.47	.	Q	.	V	.	.	.
15.533	0.8102	2.48	.	Q	.	V	.	.	.
15.550	0.8136	2.48	.	Q	.	V	.	.	.
15.567	0.8170	2.48	.	Q	.	V	.	.	.
15.583	0.8205	2.51	.	Q	.	V	.	.	.
15.600	0.8240	2.55	.	Q	.	V	.	.	.
15.617	0.8275	2.59	.	Q	.	V	.	.	.
15.633	0.8312	2.63	.	Q	.	V	.	.	.
15.650	0.8348	2.67	.	Q	.	V	.	.	.
15.667	0.8386	2.71	.	Q	.	V	.	.	.
15.683	0.8424	2.75	.	Q	.	V	.	.	.
15.700	0.8462	2.79	.	Q	.	V	.	.	.
15.717	0.8501	2.84	.	Q	.	V	.	.	.
15.733	0.8543	2.99	.	Q	.	V	.	.	.
15.750	0.8586	3.18	.	Q	.	V	.	.	.
15.767	0.8633	3.37	.	Q	.	V	.	.	.
15.783	0.8682	3.56	.	Q	.	V	.	.	.
15.800	0.8734	3.75	.	Q	.	.V	.	.	.
15.817	0.8788	3.94	.	Q	.	.V	.	.	.
15.833	0.8845	4.13	.	Q	.	.V	.	.	.
15.850	0.8904	4.32	.	Q	.	.V	.	.	.
15.867	0.8966	4.51	.	Q	.	.V	.	.	.
15.883	0.9031	4.70	.	Q	.	.V	.	.	.

15.900	0.9098	4.89	.	Q	.	.V	.	.	.
15.917	0.9168	5.09	.	.Q	.	.V	.	.	.
15.933	0.9241	5.28	.	.Q	.	.V	.	.	.
15.950	0.9316	5.47	.	.Q	.	.V	.	.	.
15.967	0.9395	5.67	.	.Q	.	.V	.	.	.
15.983	0.9475	5.86	.	.Q	.	.V	.	.	.
16.000	0.9559	6.05	.	.Q	.	.V	.	.	.
16.017	0.9653	6.84	.	.Q	.	.V	.	.	.
16.033	0.9766	8.22	.	.	Q	.V	.	.	.
16.050	0.9898	9.60	.	.	.Q	.V	.	.	.
16.067	1.0049	10.98	.	.	.	Q	.	.	.
16.083	1.0220	12.35	.	.	.	.V	Q	.	.
16.100	1.0409	13.73	.	.	.	.V	.Q	.	.
16.117	1.0617	15.11	.	.	.	.V	.	Q	.
16.133	1.0844	16.49	.	.	.	.V	.	.	Q
16.150	1.1093	18.08	.	.	.	.V	.	.	Q
16.167	1.1322	16.64	.	.	.	.V	.	.	Q
16.183	1.1528	14.96	.	.	.	.V	.	.	Q
16.200	1.1711	13.27	.	.	.	.	.VQ	.	.
16.217	1.1871	11.58	.	.	.	.	Q	.V	.
16.233	1.2007	9.90	.	.	.	.Q	.	.V	.
16.250	1.2120	8.21	.	.	.	.	Q	.	.V
16.267	1.2210	6.53	.	.	.	.	.	.	.V
16.283	1.2277	4.84	.	.	Q	.	.	.	.V
16.300	1.2325	3.53	.	.	Q	.	.	.	.V
16.317	1.2371	3.32	.	.	Q	.	.	.	.V
16.333	1.2415	3.17	.	.	Q	.	.	.	.V
16.350	1.2456	3.03	.	.	Q	.	.	.	.V
16.367	1.2496	2.89	.	.	Q	.	.	.	.V
16.383	1.2534	2.74	.	.	Q	.	.	.	.V
16.400	1.2570	2.60	.	.	Q	.	.	.	.V
16.417	1.2604	2.46	.	.	Q	.	.	.	.V
16.433	1.2636	2.31	.	.	Q	.	.	.	.V
16.450	1.2666	2.24	.	.	Q	.	.	.	.V
16.467	1.2697	2.23	.	.	Q	.	.	.	.V
16.483	1.2728	2.22	.	.	Q	.	.	.	.V
16.500	1.2758	2.20	.	.	Q	.	.	.	.V
16.517	1.2788	2.19	.	.	Q	.	.	.	.V
16.533	1.2818	2.17	.	.	Q	.	.	.	.V
16.550	1.2848	2.16	.	.	Q	.	.	.	.V
16.567	1.2877	2.15	.	.	Q	.	.	.	.V
16.583	1.2907	2.13	.	.	Q	.	.	.	.V
16.600	1.2936	2.10	.	.	Q	.	.	.	.V
16.617	1.2964	2.06	.	.	Q	.	.	.	.V
16.633	1.2992	2.02	.	.	Q	.	.	.	.V
16.650	1.3019	1.99	.	.	Q	.	.	.	.V
16.667	1.3046	1.95	.	.	Q	.	.	.	.V
16.683	1.3072	1.91	.	.	Q	.	.	.	.V
16.700	1.3098	1.87	.	.	Q	.	.	.	.V
16.717	1.3123	1.83	.	.	Q	.	.	.	.V
16.733	1.3148	1.80	.	.	Q	.	.	.	.V
16.750	1.3173	1.77	.	.	Q	.	.	.	.V
16.767	1.3197	1.75	.	.	Q	.	.	.	.V
16.783	1.3221	1.72	.	.	Q	.	.	.	.V
16.800	1.3244	1.70	.	.	Q	.	.	.	.V
16.817	1.3267	1.67	.	.	Q	.	.	.	.V
16.833	1.3290	1.64	.	.	Q	.	.	.	.V
16.850	1.3312	1.62	.	.	Q	.	.	.	.V
16.867	1.3334	1.59	.	.	Q	.	.	.	.V
16.883	1.3355	1.57	.	.	Q	.	.	.	.V
16.900	1.3377	1.55	.	.	Q	.	.	.	.V
16.917	1.3398	1.53	.	.	Q	.	.	.	.V
16.933	1.3419	1.51	.	.	Q	.	.	.	.V
16.950	1.3439	1.49	.	.	Q	.	.	.	.V

16.967	1.3460	1.48	. Q	.	.	. V	.
16.983	1.3480	1.46	. Q	.	.	. V	.
17.000	1.3500	1.44	. Q	.	.	. V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
=====	=====
0%	1021.0
10%	540.0
20%	150.0
30%	100.0
40%	70.0
50%	60.0
60%	50.0
70%	35.0
80%	25.0
90%	15.0
=====	=====

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
 (c) Copyright 1989-2011 Advanced Engineering Software (aes)
 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

* THE VILLAGE - TTM 17439 *
 * 100-YR PROPOSED CONDITION - LINE N *
 * MCHANDOO *

FILE NAME: PROP00N.DAT

TIME/DATE OF STUDY: 13:14 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J of the Hydrology Manual provides estimates of runoff hydrograph and runoff volume for watersheds whose time of concentration is less than 25 minutes. The PROGRAM User should check the applicability of using the small area unit hydrograph procedures, and follow the guidelines in Sections J and K.5 in complex watershed modeling.

FLOW PROCESS FROM NODE 202.00 TO NODE 207.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

=====

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 4.30

SOIL-LOSS RATE, Fm, (INCH/HR) = 0.068

LOW LOSS FRACTION = 0.097

TIME OF CONCENTRATION(MIN.) = 8.47

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

USER SPECIFIED RAINFALL VALUES ARE USED:

RETURN FREQUENCY(YEARS) = 100

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.52

30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.09

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.45

3-HOUR POINT RAINFALL VALUE(INCHES) = 2.43

6-HOUR POINT RAINFALL VALUE(INCHES) = 3.36

24-HOUR POINT RAINFALL VALUE(INCHES) = 5.63

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.65

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.37

=====

24 - HOUR STORM
 RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	4.4	8.7	13.1	17.5
14.000	0.6041	1.28	. Q	.	V	.	.
14.017	0.6059	1.28	. Q	.	V	.	.
14.033	0.6076	1.28	. Q	.	V	.	.
14.050	0.6094	1.29	. Q	.	V	.	.
14.067	0.6112	1.30	. Q	.	V	.	.
14.083	0.6130	1.31	. Q	.	V	.	.
14.100	0.6148	1.32	. Q	.	V	.	.
14.117	0.6167	1.33	. Q	.	V	.	.
14.133	0.6185	1.34	. Q	.	V	.	.
14.150	0.6204	1.34	. Q	.	V	.	.
14.167	0.6222	1.35	. Q	.	V	.	.
14.183	0.6241	1.36	. Q	.	V	.	.
14.200	0.6260	1.36	. Q	.	V	.	.
14.217	0.6279	1.37	. Q	.	V	.	.
14.233	0.6297	1.37	. Q	.	V	.	.
14.250	0.6316	1.38	. Q	.	V	.	.
14.267	0.6335	1.38	. Q	.	V	.	.
14.283	0.6354	1.38	. Q	.	V	.	.
14.300	0.6374	1.39	. Q	.	V	.	.
14.317	0.6393	1.39	. Q	.	V	.	.
14.333	0.6412	1.40	. Q	.	V	.	.
14.350	0.6432	1.41	. Q	.	V	.	.
14.367	0.6451	1.42	. Q	.	V	.	.
14.383	0.6471	1.43	. Q	.	V	.	.
14.400	0.6491	1.44	. Q	.	V	.	.
14.417	0.6511	1.45	. Q	.	V	.	.
14.433	0.6531	1.46	. Q	.	V	.	.
14.450	0.6551	1.47	. Q	.	V	.	.
14.467	0.6572	1.48	. Q	.	V	.	.
14.483	0.6592	1.48	. Q	.	V	.	.
14.500	0.6612	1.49	. Q	.	V	.	.
14.517	0.6633	1.50	. Q	.	V	.	.
14.533	0.6654	1.50	. Q	.	V	.	.
14.550	0.6674	1.51	. Q	.	V	.	.
14.567	0.6695	1.51	. Q	.	V	.	.
14.583	0.6716	1.52	. Q	.	V	.	.
14.600	0.6737	1.52	. Q	.	V	.	.
14.617	0.6758	1.54	. Q	.	V	.	.
14.633	0.6780	1.55	. Q	.	V	.	.
14.650	0.6801	1.56	. Q	.	V	.	.
14.667	0.6823	1.57	. Q	.	V	.	.
14.683	0.6845	1.59	. Q	.	V	.	.
14.700	0.6867	1.60	. Q	.	V	.	.
14.717	0.6889	1.61	. Q	.	V	.	.
14.733	0.6911	1.63	. Q	.	V	.	.
14.750	0.6934	1.63	. Q	.	V	.	.
14.767	0.6957	1.64	. Q	.	V	.	.
14.783	0.6979	1.65	. Q	.	V	.	.
14.800	0.7002	1.66	. Q	.	V	.	.
14.817	0.7025	1.66	. Q	.	V	.	.

14.833	0.7048	1.67	.	Q	.	V	.	.	.
14.850	0.7071	1.68	.	Q	.	V	.	.	.
14.867	0.7094	1.69	.	Q	.	V	.	.	.
14.883	0.7118	1.70	.	Q	.	V	.	.	.
14.900	0.7141	1.71	.	Q	.	V	.	.	.
14.917	0.7165	1.73	.	Q	.	V	.	.	.
14.933	0.7189	1.75	.	Q	.	V	.	.	.
14.950	0.7214	1.77	.	Q	.	V	.	.	.
14.967	0.7238	1.79	.	Q	.	V	.	.	.
14.983	0.7263	1.80	.	Q	.	V	.	.	.
15.000	0.7288	1.82	.	Q	.	V	.	.	.
15.017	0.7314	1.84	.	Q	.	V	.	.	.
15.033	0.7339	1.85	.	Q	.	V	.	.	.
15.050	0.7365	1.86	.	Q	.	V	.	.	.
15.067	0.7391	1.87	.	Q	.	V	.	.	.
15.083	0.7417	1.88	.	Q	.	V	.	.	.
15.100	0.7443	1.89	.	Q	.	V	.	.	.
15.117	0.7469	1.90	.	Q	.	V	.	.	.
15.133	0.7495	1.92	.	Q	.	V	.	.	.
15.150	0.7522	1.93	.	Q	.	V	.	.	.
15.167	0.7549	1.94	.	Q	.	V	.	.	.
15.183	0.7576	1.97	.	Q	.	V	.	.	.
15.200	0.7603	2.00	.	Q	.	V	.	.	.
15.217	0.7631	2.02	.	Q	.	V	.	.	.
15.233	0.7659	2.05	.	Q	.	V	.	.	.
15.250	0.7688	2.08	.	Q	.	V	.	.	.
15.267	0.7717	2.10	.	Q	.	V	.	.	.
15.283	0.7746	2.13	.	Q	.	V	.	.	.
15.300	0.7776	2.16	.	Q	.	V	.	.	.
15.317	0.7806	2.18	.	Q	.	V	.	.	.
15.333	0.7836	2.19	.	Q	.	V	.	.	.
15.350	0.7866	2.20	.	Q	.	V	.	.	.
15.367	0.7897	2.22	.	Q	.	V	.	.	.
15.383	0.7928	2.23	.	Q	.	V	.	.	.
15.400	0.7959	2.25	.	Q	.	V	.	.	.
15.417	0.7990	2.26	.	Q	.	V	.	.	.
15.433	0.8021	2.28	.	Q	.	V	.	.	.
15.450	0.8053	2.29	.	Q	.	V	.	.	.
15.467	0.8085	2.31	.	Q	.	V	.	.	.
15.483	0.8117	2.33	.	Q	.	V	.	.	.
15.500	0.8149	2.34	.	Q	.	V	.	.	.
15.517	0.8182	2.36	.	Q	.	V	.	.	.
15.533	0.8214	2.37	.	Q	.	V	.	.	.
15.550	0.8247	2.39	.	Q	.	V	.	.	.
15.567	0.8280	2.41	.	Q	.	V	.	.	.
15.583	0.8314	2.42	.	Q	.	V	.	.	.
15.600	0.8348	2.46	.	Q	.	V	.	.	.
15.617	0.8382	2.50	.	Q	.	V	.	.	.
15.633	0.8417	2.54	.	Q	.	V	.	.	.
15.650	0.8453	2.58	.	Q	.	V	.	.	.
15.667	0.8489	2.62	.	Q	.	V	.	.	.
15.683	0.8525	2.66	.	Q	.	V	.	.	.
15.700	0.8562	2.70	.	Q	.	V	.	.	.
15.717	0.8600	2.74	.	Q	.	V	.	.	.
15.733	0.8639	2.83	.	Q	.	V	.	.	.
15.750	0.8680	2.98	.	Q	.	.V	.	.	.
15.767	0.8723	3.13	.	Q	.	.V	.	.	.
15.783	0.8768	3.28	.	Q	.	.V	.	.	.
15.800	0.8816	3.43	.	Q	.	.V	.	.	.
15.817	0.8865	3.58	.	Q	.	.V	.	.	.
15.833	0.8916	3.73	.	Q	.	.V	.	.	.
15.850	0.8970	3.88	.	Q	.	.V	.	.	.
15.867	0.9025	4.04	.	Q	.	.V	.	.	.
15.883	0.9084	4.22	.	Q	.	.V	.	.	.

15.900	0.9144	4.41	.	Q	.	V	.	.	.
15.917	0.9207	4.59	.	Q	.	V	.	.	.
15.933	0.9273	4.78	.	Q	.	V	.	.	.
15.950	0.9342	4.96	.	.Q	.	V	.	.	.
15.967	0.9413	5.15	.	.Q	.	V	.	.	.
15.983	0.9486	5.33	.	.Q	.	V	.	.	.
16.000	0.9562	5.52	.	.Q	.	V	.	.	.
16.017	0.9649	6.31	.	Q	.	V	.	.	.
16.033	0.9755	7.71	.	.	Q	V	.	.	.
16.050	0.9881	9.11	.	.	Q	V	.	.	.
16.067	1.0025	10.51	.	.	Q	.	.	.	.
16.083	1.0189	11.91	.	.	V	Q	.	.	.
16.100	1.0373	13.31	.	.	V	Q	.	.	.
16.117	1.0575	14.70	.	.	V	.	Q	.	.
16.133	1.0797	16.10	.	.	V	.	Q	.	.
16.150	1.1037	17.46	.	.	V	.	Q	.	Q
16.167	1.1254	15.73	.	.	V	.	Q	.	.
16.183	1.1448	14.05	.	.	V	.	Q	.	.
16.200	1.1618	12.38	.	.	V	.	Q	.	.
16.217	1.1766	10.70	.	.	Q	V	.	.	.
16.233	1.1890	9.02	.	.	Q	V	.	.	.
16.250	1.1991	7.35	.	.	Q	.	V	.	.
16.267	1.2069	5.67	.	.	Q	.	V	.	.
16.283	1.2124	3.99	.	.	Q	.	V	.	.
16.300	1.2168	3.18	.	.	Q	.	V	.	.
16.317	1.2210	3.06	.	.	Q	.	V	.	.
16.333	1.2251	2.93	.	.	Q	.	V	.	.
16.350	1.2289	2.81	.	.	Q	.	V	.	.
16.367	1.2326	2.68	.	.	Q	.	V	.	.
16.383	1.2361	2.56	.	.	Q	.	V	.	.
16.400	1.2395	2.43	.	.	Q	.	V	.	.
16.417	1.2427	2.31	.	.	Q	.	V	.	.
16.433	1.2457	2.20	.	.	Q	.	V	.	.
16.450	1.2487	2.18	.	.	Q	.	V	.	.
16.467	1.2517	2.16	.	.	Q	.	V	.	.
16.483	1.2546	2.14	.	.	Q	.	V	.	.
16.500	1.2575	2.12	.	.	Q	.	V	.	.
16.517	1.2604	2.10	.	.	Q	.	V	.	.
16.533	1.2633	2.08	.	.	Q	.	V	.	.
16.550	1.2662	2.06	.	.	Q	.	V	.	.
16.567	1.2690	2.05	.	.	Q	.	V	.	.
16.583	1.2718	2.02	.	.	Q	.	V	.	.
16.600	1.2745	1.99	.	.	Q	.	V	.	.
16.617	1.2772	1.95	.	.	Q	.	V	.	.
16.633	1.2798	1.92	.	.	Q	.	.V	.	.
16.650	1.2824	1.89	.	.	Q	.	.V	.	.
16.667	1.2850	1.86	.	.	Q	.	.V	.	.
16.683	1.2875	1.82	.	.	Q	.	.V	.	.
16.700	1.2900	1.79	.	.	Q	.	.V	.	.
16.717	1.2924	1.76	.	.	Q	.	.V	.	.
16.733	1.2948	1.74	.	.	Q	.	.V	.	.
16.750	1.2971	1.71	.	.	Q	.	.V	.	.
16.767	1.2995	1.69	.	.	Q	.	.V	.	.
16.783	1.3018	1.67	.	.	Q	.	.V	.	.
16.800	1.3040	1.65	.	.	Q	.	.V	.	.
16.817	1.3063	1.62	.	.	Q	.	.V	.	.
16.833	1.3085	1.60	.	.	Q	.	.V	.	.
16.850	1.3107	1.58	.	.	Q	.	.V	.	.
16.867	1.3128	1.56	.	.	Q	.	.V	.	.
16.883	1.3149	1.54	.	.	Q	.	.V	.	.
16.900	1.3170	1.53	.	.	Q	.	.V	.	.
16.917	1.3191	1.51	.	.	Q	.	.V	.	.
16.933	1.3212	1.49	.	.	Q	.	.V	.	.
16.950	1.3232	1.48	.	.	Q	.	.V	.	.

16.967	1.3252	1.46	. Q	.	.	. V	.
16.983	1.3272	1.45	. Q	.	.	. V	.
17.000	1.3292	1.43	. Q	.	.	. V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	540.0
20%	145.0
30%	90.0
40%	70.0
50%	60.0
60%	50.0
70%	35.0
80%	25.0
90%	15.0

 FLOW PROCESS FROM NODE 207.00 TO NODE 208.00 IS CODE = 4

>>>>MODEL PIPEFLOW ROUTING OF STREAM #1<<<<<<

MODEL PIPEFLOW ROUTING OF STREAM 1 WHERE
 STORAGE EFFECTS ARE NEGLECTED WITHIN THE PIPE, FLOW
 VELOCITIES ARE ESTIMATED BY ASSUMING STEADY FLOW FOR
 EACH UNIT INTERVAL(NORMAL DEPTH, Dn), AND FLOWS IN EXCESS
 OF (.82)(DIAMETER) ARE PONDED AT THE UPSTREAM INLET:
 UNIT INTERVAL FLOW VELOCITY COMPUTED USING Dn UP TO
 (0.938)(DIAMETER):

PIPELENGTH(FT) = 75.00 MANNINGS FACTOR = 0.013
 UPSTREAM ELEVATION(FT) = 769.00
 DOWNSTREAM ELEVATION(FT) = 760.00
 PIPE DIAMETER(FT) = 1.50

NORMAL DEPTH VELOCITY PIPE ROUTING RESULTS:

TIME (HRS)	INFLOW (CFS)	VELOCITY (FPS)	OUTFLOW (CFS)	UPSTREAM PONDING(AF)
15.000	1.82	10.71	1.82	0.000
15.017	1.84	10.73	1.84	0.000
15.033	1.85	10.75	1.85	0.000
15.050	1.86	10.76	1.86	0.000
15.067	1.87	10.77	1.87	0.000
15.083	1.88	10.79	1.88	0.000
15.100	1.89	10.80	1.89	0.000
15.117	1.90	10.81	1.90	0.000
15.133	1.92	10.83	1.91	0.000
15.150	1.93	10.84	1.93	0.000
15.167	1.94	10.86	1.94	0.000
15.183	1.97	10.89	1.97	0.000
15.200	2.00	10.93	1.99	0.000
15.217	2.02	10.96	2.02	0.000

15.233	2.05	11.00	2.05	0.000
15.250	2.08	11.03	2.08	0.000
15.267	2.10	11.06	2.10	0.000
15.283	2.13	11.10	2.13	0.000
15.300	2.16	11.13	2.16	0.000
15.317	2.18	11.15	2.17	0.000
15.333	2.19	11.17	2.19	0.000
15.350	2.20	11.19	2.20	0.000
15.367	2.22	11.21	2.22	0.000
15.383	2.23	11.22	2.23	0.000
15.400	2.25	11.24	2.25	0.000
15.417	2.26	11.26	2.26	0.000
15.433	2.28	11.28	2.28	0.000
15.450	2.29	11.30	2.29	0.000
15.467	2.31	11.32	2.31	0.000
15.483	2.33	11.34	2.32	0.000
15.500	2.34	11.36	2.34	0.000
15.517	2.36	11.38	2.36	0.000
15.533	2.37	11.40	2.37	0.000
15.550	2.39	11.42	2.39	0.000
15.567	2.41	11.44	2.41	0.000
15.583	2.42	11.46	2.42	0.000
15.600	2.46	11.51	2.46	0.000
15.617	2.50	11.55	2.50	0.000
15.633	2.54	11.60	2.54	0.000
15.650	2.58	11.65	2.58	0.000
15.667	2.62	11.70	2.62	0.000
15.683	2.66	11.75	2.66	0.000
15.700	2.70	11.80	2.70	0.000
15.717	2.74	11.85	2.73	0.000
15.733	2.83	11.96	2.82	0.000
15.750	2.98	12.15	2.97	0.000
15.767	3.13	12.34	3.12	0.000
15.783	3.28	12.53	3.27	0.000
15.800	3.43	12.71	3.42	0.000
15.817	3.58	12.90	3.57	0.000
15.833	3.73	13.06	3.72	0.000
15.850	3.88	13.21	3.87	0.000
15.867	4.04	13.36	4.03	0.000
15.883	4.22	13.53	4.21	0.000
15.900	4.41	13.71	4.39	0.000
15.917	4.59	13.89	4.58	0.000
15.933	4.78	14.07	4.77	0.000
15.950	4.96	14.25	4.95	0.000
15.967	5.15	14.42	5.14	0.000
15.983	5.33	14.60	5.32	0.000
16.000	5.52	14.77	5.51	0.000
16.017	6.31	15.35	6.26	0.000
16.033	7.71	16.32	7.63	0.000
16.050	9.11	17.14	9.04	0.000
16.067	10.51	17.90	10.44	0.000
16.083	11.91	18.48	11.84	0.000
16.100	13.31	18.99	13.24	0.000
16.117	14.70	19.50	14.64	0.000
16.133	16.10	19.90	16.03	0.000
16.150	17.46	20.34	17.40	0.000
16.167	15.73	19.79	15.81	0.000
16.183	14.05	19.27	14.14	0.000
16.200	12.38	18.65	12.46	0.000
16.217	10.70	18.00	10.79	0.000
16.233	9.02	17.09	9.11	0.000
16.250	7.35	16.10	7.43	0.000
16.267	5.67	14.88	5.76	0.000
16.283	3.99	13.31	4.09	0.000

16.300	3.18	12.40	3.24	0.000
16.317	3.06	12.25	3.07	0.000
16.333	2.93	12.09	2.94	0.000
16.350	2.81	11.94	2.82	0.000
16.367	2.68	11.78	2.69	0.000
16.383	2.56	11.63	2.57	0.000
16.400	2.43	11.47	2.44	0.000
16.417	2.31	11.32	2.32	0.000
16.433	2.20	11.19	2.21	0.000
16.450	2.18	11.15	2.18	0.000
16.467	2.16	11.13	2.16	0.000
16.483	2.14	11.11	2.14	0.000
16.500	2.12	11.08	2.12	0.000
16.517	2.10	11.06	2.10	0.000
16.533	2.08	11.04	2.09	0.000
16.550	2.06	11.01	2.07	0.000
16.567	2.05	10.99	2.05	0.000
16.583	2.02	10.96	2.02	0.000
16.600	1.99	10.92	1.99	0.000
16.617	1.95	10.87	1.96	0.000
16.633	1.92	10.83	1.92	0.000
16.650	1.89	10.79	1.89	0.000
16.667	1.86	10.75	1.86	0.000
16.683	1.82	10.71	1.83	0.000
16.700	1.79	10.54	1.79	0.000
16.717	1.76	10.36	1.76	0.000
16.733	1.74	10.22	1.74	0.000
16.750	1.71	10.09	1.71	0.000
16.767	1.69	9.96	1.69	0.000
16.783	1.67	9.83	1.67	0.000
16.800	1.65	9.69	1.65	0.000
16.817	1.62	9.56	1.62	0.000
16.833	1.60	9.43	1.60	0.000
16.850	1.58	9.30	1.58	0.000
16.867	1.56	9.19	1.56	0.000
16.883	1.54	9.09	1.54	0.000
16.900	1.53	8.99	1.53	0.000
16.917	1.51	8.90	1.51	0.000
16.933	1.49	8.80	1.49	0.000
16.950	1.48	8.70	1.48	0.000
16.967	1.46	8.60	1.46	0.000
16.983	1.45	8.50	1.45	0.000
17.000	1.43	8.41	1.43	0.000
17.017	1.42	8.33	1.42	0.000
17.033	1.40	8.25	1.40	0.000
17.050	1.39	8.17	1.39	0.000
17.067	1.37	8.09	1.37	0.000
17.083	1.36	8.01	1.36	0.000
17.100	1.35	7.93	1.35	0.000
17.117	1.33	7.85	1.33	0.000
17.133	1.32	7.77	1.32	0.000
17.150	1.31	7.70	1.31	0.000
17.167	1.30	7.64	1.30	0.000
17.183	1.29	7.58	1.29	0.000
17.200	1.28	7.52	1.28	0.000
17.217	1.27	7.45	1.27	0.000
17.233	1.26	7.39	1.26	0.000
17.250	1.25	7.33	1.25	0.000
17.267	1.23	7.27	1.23	0.000
17.283	1.22	7.21	1.22	0.000
17.300	1.22	7.16	1.22	0.000
17.317	1.21	7.10	1.21	0.000
17.333	1.20	7.05	1.20	0.000
17.350	1.19	7.00	1.19	0.000

17.367	1.18	6.95	1.18	0.000
17.383	1.17	6.90	1.17	0.000
17.400	1.16	6.85	1.16	0.000
17.417	1.16	6.80	1.16	0.000
17.433	1.15	6.76	1.15	0.000
17.450	1.14	6.71	1.14	0.000
17.467	1.13	6.67	1.13	0.000
17.483	1.13	6.63	1.13	0.000
17.500	1.12	6.58	1.12	0.000
17.517	1.11	6.54	1.11	0.000
17.533	1.10	6.50	1.10	0.000
17.550	1.10	6.45	1.10	0.000
17.567	1.09	6.41	1.09	0.000
17.583	1.08	6.38	1.08	0.000
17.600	1.08	6.34	1.08	0.000
17.617	1.07	6.30	1.07	0.000
17.633	1.06	6.27	1.06	0.000
17.650	1.06	6.23	1.06	0.000
17.667	1.05	6.19	1.05	0.000
17.683	1.05	6.15	1.05	0.000
17.700	1.04	6.12	1.04	0.000
17.717	1.03	6.08	1.03	0.000
17.733	1.03	6.05	1.03	0.000
17.750	1.02	6.02	1.02	0.000
17.767	1.02	5.99	1.02	0.000
17.783	1.01	5.96	1.01	0.000
17.800	1.01	5.92	1.01	0.000
17.817	1.00	5.89	1.00	0.000
17.833	1.00	5.86	1.00	0.000
17.850	0.99	5.83	0.99	0.000
17.867	0.99	5.80	0.99	0.000
17.883	0.98	5.77	0.98	0.000
17.900	0.98	5.74	0.98	0.000
17.917	0.97	5.71	0.97	0.000
17.933	0.97	5.69	0.97	0.000
17.950	0.96	5.66	0.96	0.000
17.967	0.96	5.63	0.96	0.000
17.983	0.95	5.60	0.95	0.000
18.000	0.94	5.52	0.94	0.000
18.017	0.92	5.43	0.92	0.000
18.033	0.91	5.34	0.91	0.000
18.050	0.89	5.25	0.89	0.000
18.067	0.88	5.16	0.88	0.000
18.083	0.86	5.07	0.86	0.000
18.100	0.85	4.98	0.85	0.000
18.117	0.83	4.89	0.83	0.000
18.133	0.82	4.80	0.82	0.000
18.150	0.80	4.72	0.80	0.000
18.167	0.79	4.63	0.79	0.000
18.183	0.77	4.54	0.77	0.000
18.200	0.76	4.46	0.76	0.000
18.217	0.74	4.37	0.74	0.000
18.233	0.73	4.28	0.73	0.000
18.250	0.71	4.20	0.71	0.000
18.267	0.70	4.12	0.70	0.000
18.283	0.69	4.09	0.69	0.000
18.300	0.69	4.07	0.69	0.000
18.317	0.69	4.05	0.69	0.000
18.333	0.69	4.03	0.69	0.000
18.350	0.68	4.01	0.68	0.000
18.367	0.68	3.99	0.68	0.000
18.383	0.68	3.98	0.68	0.000
18.400	0.67	3.96	0.67	0.000
18.417	0.67	3.94	0.67	0.000

18.433	0.67	3.92	0.67	0.000
18.450	0.66	3.90	0.66	0.000
18.467	0.66	3.89	0.66	0.000
18.483	0.66	3.87	0.66	0.000
18.500	0.65	3.85	0.65	0.000
18.517	0.65	3.84	0.65	0.000
18.533	0.65	3.82	0.65	0.000
18.550	0.65	3.80	0.65	0.000
18.567	0.64	3.79	0.64	0.000
18.583	0.64	3.77	0.64	0.000
18.600	0.64	3.75	0.64	0.000
18.617	0.64	3.74	0.64	0.000
18.633	0.63	3.72	0.63	0.000
18.650	0.63	3.71	0.63	0.000
18.667	0.63	3.69	0.63	0.000
18.683	0.62	3.68	0.62	0.000
18.700	0.62	3.66	0.62	0.000
18.717	0.62	3.65	0.62	0.000
18.733	0.62	3.63	0.62	0.000
18.750	0.61	3.62	0.61	0.000
18.767	0.61	3.60	0.61	0.000
18.783	0.61	3.59	0.61	0.000
18.800	0.61	3.57	0.61	0.000
18.817	0.60	3.56	0.60	0.000
18.833	0.60	3.55	0.60	0.000
18.850	0.60	3.53	0.60	0.000
18.867	0.60	3.52	0.60	0.000
18.883	0.60	3.51	0.60	0.000
18.900	0.59	3.49	0.59	0.000
18.917	0.59	3.48	0.59	0.000
18.933	0.59	3.47	0.59	0.000
18.950	0.59	3.45	0.59	0.000
18.967	0.58	3.44	0.58	0.000
18.983	0.58	3.43	0.58	0.000
19.000	0.58	3.42	0.58	0.000

FLOW PROCESS FROM NODE 208.00 TO NODE 208.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 1.50

SOIL-LOSS RATE, Fm, (INCH/HR) = 0.022

LOW LOSS FRACTION = 0.060

TIME OF CONCENTRATION(MIN.) = 10.88

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

USER SPECIFIED RAINFALL VALUES ARE USED:

RETURN FREQUENCY(YEARS) = 100

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.52

30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.09

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.45

3-HOUR POINT RAINFALL VALUE(INCHES) = 2.43

6-HOUR POINT RAINFALL VALUE(INCHES) = 3.36

24-HOUR POINT RAINFALL VALUE(INCHES) = 5.63

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 0.60

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.10

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2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

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HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)

(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	1.3	2.7	4.0	5.3
14.000	0.2183	0.46	. Q	. V	.	.	.
14.017	0.2190	0.47	. Q	. V	.	.	.
14.033	0.2196	0.47	. Q	. V	.	.	.
14.050	0.2203	0.47	. Q	. V	.	.	.
14.067	0.2209	0.47	. Q	. V	.	.	.
14.083	0.2216	0.47	. Q	. V	.	.	.
14.100	0.2222	0.47	. Q	. V	.	.	.
14.117	0.2229	0.48	. Q	. V	.	.	.
14.133	0.2235	0.48	. Q	. V	.	.	.
14.150	0.2242	0.48	. Q	. V	.	.	.
14.167	0.2249	0.48	. Q	. V	.	.	.
14.183	0.2255	0.48	. Q	. V	.	.	.
14.200	0.2262	0.48	. Q	. V	.	.	.
14.217	0.2269	0.49	. Q	. V	.	.	.
14.233	0.2275	0.49	. Q	. V	.	.	.
14.250	0.2282	0.50	. Q	. V	.	.	.
14.267	0.2289	0.50	. Q	. V	.	.	.
14.283	0.2296	0.50	. Q	. V	.	.	.
14.300	0.2303	0.51	. Q	. V	.	.	.
14.317	0.2310	0.51	. Q	. V	.	.	.
14.333	0.2317	0.51	. Q	. V	.	.	.
14.350	0.2324	0.52	. Q	. V	.	.	.
14.367	0.2331	0.52	. Q	. V	.	.	.
14.383	0.2339	0.52	. Q	. V	.	.	.
14.400	0.2346	0.52	. Q	. V	.	.	.
14.417	0.2353	0.53	. Q	. V	.	.	.
14.433	0.2360	0.53	. Q	. V	.	.	.
14.450	0.2368	0.53	. Q	. V	.	.	.
14.467	0.2375	0.53	. Q	. V	.	.	.
14.483	0.2382	0.53	. Q	. V	.	.	.
14.500	0.2390	0.54	. Q	. V	.	.	.
14.517	0.2397	0.54	. Q	. V	.	.	.
14.533	0.2404	0.54	. Q	. V	.	.	.
14.550	0.2412	0.54	. Q	. V	.	.	.
14.567	0.2419	0.55	. Q	. V	.	.	.
14.583	0.2427	0.55	. Q	. V	.	.	.
14.600	0.2435	0.55	. Q	. V	.	.	.
14.617	0.2442	0.56	. Q	. V	.	.	.
14.633	0.2450	0.56	. Q	. V	.	.	.
14.650	0.2458	0.57	. Q	. V	.	.	.
14.667	0.2466	0.57	. Q	. V	.	.	.
14.683	0.2474	0.58	. Q	. V	.	.	.
14.700	0.2482	0.58	. Q	. V	.	.	.
14.717	0.2490	0.59	. Q	. V	.	.	.
14.733	0.2498	0.59	. Q	. V	.	.	.
14.750	0.2506	0.60	. Q	. V	.	.	.
14.767	0.2515	0.60	. Q	. V	.	.	.
14.783	0.2523	0.60	. Q	. V	.	.	.
14.800	0.2531	0.60	. Q	. V	.	.	.
14.817	0.2540	0.61	. Q	. V	.	.	.

14.833	0.2548	0.61	. Q	. V	.	.	.
14.850	0.2556	0.61	. Q	. V	.	.	.
14.867	0.2565	0.62	. Q	. V	.	.	.
14.883	0.2573	0.62	. Q	. V	.	.	.
14.900	0.2582	0.62	. Q	. V	.	.	.
14.917	0.2590	0.62	. Q	. V	.	.	.
14.933	0.2599	0.63	. Q	. V	.	.	.
14.950	0.2608	0.64	. Q	. V	.	.	.
14.967	0.2617	0.64	. Q	. V	.	.	.
14.983	0.2626	0.65	. Q	. V	.	.	.
15.000	0.2635	0.66	. Q	. V	.	.	.
15.017	0.2644	0.67	. Q	. V	.	.	.
15.033	0.2653	0.67	. Q	. V	.	.	.
15.050	0.2663	0.68	. Q	. V	.	.	.
15.067	0.2672	0.69	. Q	. V	.	.	.
15.083	0.2682	0.69	. Q	. V	.	.	.
15.100	0.2691	0.70	. Q	. V	.	.	.
15.117	0.2701	0.71	. Q	. V	.	.	.
15.133	0.2711	0.71	. Q	. V	.	.	.
15.150	0.2721	0.72	. Q	. V	.	.	.
15.167	0.2731	0.72	. Q	. V	.	.	.
15.183	0.2741	0.72	. Q	. V	.	.	.
15.200	0.2751	0.73	. Q	. V	.	.	.
15.217	0.2761	0.73	. Q	. V	.	.	.
15.233	0.2771	0.74	. Q	. V	.	.	.
15.250	0.2781	0.74	. Q	. V	.	.	.
15.267	0.2791	0.75	. Q	. V	.	.	.
15.283	0.2802	0.75	. Q	. V	.	.	.
15.300	0.2812	0.76	. Q	. V	.	.	.
15.317	0.2823	0.77	. Q	. V	.	.	.
15.333	0.2834	0.77	. Q	. V	.	.	.
15.350	0.2844	0.78	. Q	. V	.	.	.
15.367	0.2855	0.79	. Q	. V	.	.	.
15.383	0.2866	0.80	. Q	. V	.	.	.
15.400	0.2877	0.80	. Q	. V	.	.	.
15.417	0.2888	0.81	. Q	. V	.	.	.
15.433	0.2900	0.82	. Q	. V	.	.	.
15.450	0.2911	0.83	. Q	. V	.	.	.
15.467	0.2923	0.83	. Q	. V	.	.	.
15.483	0.2934	0.84	. Q	. V	.	.	.
15.500	0.2946	0.84	. Q	. V	.	.	.
15.517	0.2957	0.85	. Q	. V	.	.	.
15.533	0.2969	0.85	. Q	. V	.	.	.
15.550	0.2981	0.86	. Q	. V	.	.	.
15.567	0.2993	0.86	. Q	. V	.	.	.
15.583	0.3005	0.86	. Q	. V	.	.	.
15.600	0.3017	0.87	. Q	. V	.	.	.
15.617	0.3029	0.87	. Q	. V	.	.	.
15.633	0.3041	0.88	. Q	. V	.	.	.
15.650	0.3053	0.89	. Q	. V	.	.	.
15.667	0.3066	0.92	. Q	. V	.	.	.
15.683	0.3079	0.96	. Q	. V	.	.	.
15.700	0.3093	1.00	. Q	. V	.	.	.
15.717	0.3107	1.03	. Q	. V	.	.	.
15.733	0.3122	1.07	. Q	. V	.	.	.
15.750	0.3137	1.10	. Q	. V	.	.	.
15.767	0.3153	1.14	. Q	. V	.	.	.
15.783	0.3169	1.17	. Q	. V	.	.	.
15.800	0.3185	1.21	. Q	. V	.	.	.
15.817	0.3202	1.24	. Q	. V	.	.	.
15.833	0.3220	1.28	. Q	. V	.	.	.
15.850	0.3238	1.33	. Q	. V	.	.	.
15.867	0.3257	1.37	. Q	. V	.	.	.
15.883	0.3277	1.41	. Q	. V	.	.	.

15.900	0.3297	1.46	.	Q	.	V	.	.
15.917	0.3317	1.50	.	.Q	.	V	.	.
15.933	0.3339	1.54	.	.Q	.	V	.	.
15.950	0.3360	1.59	.	.Q	.	V	.	.
15.967	0.3383	1.63	.	.	Q	.	V	.
15.983	0.3406	1.67	.	.	Q	.	V	.
16.000	0.3430	1.72	.	.	Q	.	V	.
16.017	0.3456	1.90	.	.	Q	.	V	.
16.033	0.3487	2.23	.	.	Q	.	V	.
16.050	0.3522	2.56	.	.	Q	.	V	.
16.067	0.3562	2.89	.	.	.Q	V	.	.
16.083	0.3606	3.22	.	.	.	Q	.	.
16.100	0.3655	3.54	.	.	.	V	Q	.
16.117	0.3708	3.87	.	.	.	V	Q	.
16.133	0.3766	4.20	.	.	.	V	.Q	.
16.150	0.3828	4.53	.	.	.	V	.	Q
16.167	0.3895	4.86	.	.	.	V	.	Q
16.183	0.3968	5.31	.	.	.	V	.	Q
16.200	0.4038	5.06	.	.	.	V	.	Q
16.217	0.4102	4.67	.	.	.	V	.	Q
16.233	0.4161	4.28	.	.	.	V	.	Q
16.250	0.4215	3.88	.	.	.	V	Q	.
16.267	0.4263	3.49	.	.	.	Q	V	.
16.283	0.4305	3.10	.	.	.	Q	V	.
16.300	0.4343	2.70	.	.	.	Q	V	.
16.317	0.4374	2.31	.	.	.	Q	V	.
16.333	0.4401	1.92	.	.	.	Q	V	.
16.350	0.4422	1.52	.	.	.	.Q	V	.
16.367	0.4438	1.14	.	.	.	Q	V	.
16.383	0.4451	1.01	.	.	.	Q	V	.
16.400	0.4465	0.99	.	.	.	Q	V	.
16.417	0.4479	0.97	.	.	.	Q	V	.
16.433	0.4492	0.95	.	.	.	Q	V	.
16.450	0.4505	0.93	.	.	.	Q	V	.
16.467	0.4517	0.91	.	.	.	Q	V	.
16.483	0.4530	0.90	.	.	.	Q	V	.
16.500	0.4542	0.88	.	.	.	Q	V	.
16.517	0.4553	0.86	.	.	.	Q	V	.
16.533	0.4565	0.84	.	.	.	Q	V	.
16.550	0.4576	0.82	.	.	.	Q	V	.
16.567	0.4587	0.80	.	.	.	Q	V	.
16.583	0.4598	0.79	.	.	.	Q	V	.
16.600	0.4609	0.77	.	.	.	Q	V	.
16.617	0.4619	0.76	.	.	.	Q	V	.
16.633	0.4629	0.75	.	.	.	Q	V	.
16.650	0.4639	0.73	.	.	.	Q	V	.
16.667	0.4649	0.72	.	.	.	Q	V	.
16.683	0.4659	0.70	.	.	.	Q	V	.
16.700	0.4669	0.69	.	.	.	Q	V	.
16.717	0.4678	0.67	.	.	.	Q	V	.
16.733	0.4687	0.66	.	.	.	Q	V	.
16.750	0.4696	0.65	.	.	.	Q	V	.
16.767	0.4705	0.64	.	.	.	Q	V	.
16.783	0.4714	0.63	.	.	.	Q	V	.
16.800	0.4722	0.63	.	.	.	Q	V	.
16.817	0.4731	0.62	.	.	.	Q	V	.
16.833	0.4739	0.61	.	.	.	Q	V	.
16.850	0.4747	0.60	.	.	.	Q	V	.
16.867	0.4755	0.59	.	.	.	Q	V	.
16.883	0.4763	0.58	.	.	.	Q	V	.
16.900	0.4771	0.57	.	.	.	Q	V	.
16.917	0.4779	0.57	.	.	.	Q	V	.
16.933	0.4787	0.56	.	.	.	Q	V	.
16.950	0.4795	0.55	.	.	.	Q	V	.

16.967	0.4802	0.55	.	Q	.	.	.	V	.
16.983	0.4810	0.54	.	Q	.	.	.	V	.
17.000	0.4817	0.54	.	Q	.	.	.	V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	765.0
20%	195.0
30%	115.0
40%	90.0
50%	75.0
60%	60.0
70%	45.0
80%	30.0
90%	15.0

 FLOW PROCESS FROM NODE 228.00 TO NODE 228.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<

 STREAM HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	7.5	15.0	22.5	30.0
15.800	1.1996	4.63	.	Q	.	V	.
15.817	1.2063	4.82	.	Q	.	V	.
15.833	1.2131	5.00	.	Q	.	V	.
15.850	1.2203	5.20	.	Q	.	V	.
15.867	1.2277	5.40	.	Q	.	V	.
15.883	1.2355	5.62	.	Q	.	V	.
15.900	1.2435	5.85	.	Q	.	V	.
15.917	1.2519	6.08	.	Q	.	V	.
15.933	1.2606	6.31	.	Q	.	V	.
15.950	1.2696	6.54	.	Q	.	V	.
15.967	1.2789	6.77	.	Q	.	V	.
15.983	1.2886	7.00	.	Q	.	V	.
16.000	1.2985	7.23	.	Q	.	V	.
16.017	1.3098	8.17	.	Q	.	V	.
16.033	1.3234	9.87	.	Q	.	V	.
16.050	1.3393	11.59	.	Q	.	V	.
16.067	1.3577	13.33	.	Q	.	V	.
16.083	1.3784	15.05	.	Q	.	V	.
16.100	1.4015	16.78	.	Q	.	V	.
16.117	1.4270	18.51	.	Q	.	V	.
16.133	1.4549	20.23	.	Q	.	V	.
16.150	1.4851	21.93	.	Q	.	V	.
16.167	1.5136	20.67	.	Q	.	V	.
16.183	1.5403	19.44	.	Q	.	V	.
16.200	1.5645	17.52	.	Q	.	V	.
16.217	1.5858	15.46	.	Q	.	V	.
16.233	1.6042	13.38	.	Q	.	V	.
16.250	1.6198	11.32	.	Q	.	V	.

16.267	1.6325	9.25	.	.	Q	.	V.	.
16.283	1.6424	7.19	.	.	Q.	.	V.	.
16.300	1.6506	5.94	.	.	Q	.	V.	.
16.317	1.6580	5.38	.	.	Q	.	V.	.
16.333	1.6647	4.86	.	.	Q	.	V.	.
16.350	1.6707	4.34	.	.	Q	.	V.	.
16.367	1.6760	3.83	.	.	Q	.	V.	.
16.383	1.6809	3.58	.	.	Q	.	V.	.
16.400	1.6856	3.44	.	.	Q	.	V.	.
16.417	1.6902	3.29	.	.	Q	.	V	.
16.433	1.6945	3.17	.	.	Q	.	V	.
16.450	1.6988	3.11	.	.	Q	.	V	.
16.467	1.7031	3.07	.	.	Q	.	V	.
16.483	1.7072	3.04	.	.	Q	.	V	.
16.500	1.7114	3.00	.	.	Q	.	V	.
16.517	1.7155	2.96	.	.	Q	.	V	.
16.533	1.7195	2.92	.	.	Q	.	V	.
16.550	1.7234	2.88	.	.	Q	.	V	.
16.567	1.7274	2.85	.	.	Q	.	V	.
16.583	1.7312	2.81	.	.	Q	.	V	.
16.600	1.7350	2.76	.	.	Q	.	V	.
16.617	1.7388	2.72	.	.	Q	.	V	.
16.633	1.7425	2.67	.	.	Q	.	V	.
16.650	1.7461	2.62	.	.	Q	.	.V	.
16.667	1.7496	2.58	.	.	Q	.	.V	.
16.683	1.7531	2.53	.	.	Q	.	.V	.
16.700	1.7565	2.48	.	.	Q	.	.V	.
16.717	1.7599	2.43	.	.	Q	.	.V	.
16.733	1.7632	2.40	.	.	Q	.	.V	.
16.750	1.7664	2.37	.	.	Q	.	.V	.
16.767	1.7697	2.34	.	.	Q	.	.V	.
16.783	1.7728	2.30	.	.	Q	.	.V	.
16.800	1.7760	2.27	.	.	Q	.	.V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1009.0
10%	640.0
20%	170.0
30%	100.0
40%	75.0
50%	65.0
60%	55.0
70%	40.0
80%	25.0
90%	15.0

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
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Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * THE VILLAGE - TTM 17439
* 25-YR PROPOSED CONDITION - LINE N
* MCHANDOO

FILE NAME: PROP25N.DAT
TIME/DATE OF STUDY: 11:05 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J
of the Hydrology Manual provides estimates of runoff
hydrograph and runoff volume for watersheds whose time of
concentration is less than 25 minutes. The PROGRAM User
should check the applicability of using the small area unit
hydrograph procedures, and follow the guidelines in
Sections J and K.5 in complex watershed modeling.

FLOW PROCESS FROM NODE 202.00 TO NODE 207.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

- RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
TOTAL CATCHMENT AREA(ACRES) = 4.30
SOIL-LOSS RATE, Fm, (INCH/HR) = 0.068
LOW LOSS FRACTION = 0.213
TIME OF CONCENTRATION(MIN.) = 8.65
SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
USER SPECIFIED RAINFALL VALUES ARE USED:
RETURN FREQUENCY(YEARS) = 25
5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.40
30-MINUTE POINT RAINFALL VALUE(INCHES) = 0.87
1-HOUR POINT RAINFALL VALUE(INCHES) = 1.15
3-HOUR POINT RAINFALL VALUE(INCHES) = 1.94
6-HOUR POINT RAINFALL VALUE(INCHES) = 2.71
24-HOUR POINT RAINFALL VALUE(INCHES) = 4.49

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.20
TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.41

=====

24-HOUR STORM
RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

Table with columns: TIME(HRS), VOLUME(AF), Q(CFS), and rainfall intensity values for 0.3, 3.3, 6.7, 10.0, and 13.4. Rows show data from 14.000 to 14.817 hours.

14.833	0.4921	1.22	.	Q	.	V	.	.	.
14.850	0.4938	1.23	.	Q	.	V	.	.	.
14.867	0.4955	1.24	.	Q	.	V	.	.	.
14.883	0.4972	1.26	.	Q	.	V	.	.	.
14.900	0.4990	1.27	.	Q	.	V	.	.	.
14.917	0.5008	1.29	.	Q	.	V	.	.	.
14.933	0.5026	1.30	.	Q	.	V	.	.	.
14.950	0.5044	1.32	.	Q	.	V	.	.	.
14.967	0.5062	1.33	.	Q	.	V	.	.	.
14.983	0.5081	1.35	.	Q	.	V	.	.	.
15.000	0.5099	1.36	.	Q	.	V	.	.	.
15.017	0.5118	1.37	.	Q	.	V	.	.	.
15.033	0.5137	1.38	.	Q	.	V	.	.	.
15.050	0.5156	1.39	.	Q	.	V	.	.	.
15.067	0.5176	1.40	.	Q	.	V	.	.	.
15.083	0.5195	1.41	.	Q	.	V	.	.	.
15.100	0.5215	1.42	.	Q	.	V	.	.	.
15.117	0.5234	1.43	.	Q	.	V	.	.	.
15.133	0.5254	1.44	.	Q	.	V	.	.	.
15.150	0.5274	1.45	.	Q	.	V	.	.	.
15.167	0.5294	1.47	.	Q	.	V	.	.	.
15.183	0.5315	1.50	.	Q	.	V	.	.	.
15.200	0.5336	1.52	.	Q	.	V	.	.	.
15.217	0.5357	1.54	.	Q	.	V	.	.	.
15.233	0.5379	1.57	.	Q	.	V	.	.	.
15.250	0.5401	1.59	.	Q	.	V	.	.	.
15.267	0.5423	1.61	.	Q	.	V	.	.	.
15.283	0.5445	1.64	.	Q	.	V	.	.	.
15.300	0.5468	1.65	.	Q	.	V	.	.	.
15.317	0.5491	1.67	.	Q	.	V	.	.	.
15.333	0.5514	1.68	.	Q	.	V	.	.	.
15.350	0.5538	1.70	.	Q	.	V	.	.	.
15.367	0.5561	1.71	.	Q	.	V	.	.	.
15.383	0.5585	1.73	.	Q	.	V	.	.	.
15.400	0.5609	1.74	.	Q	.	V	.	.	.
15.417	0.5633	1.76	.	Q	.	V	.	.	.
15.433	0.5658	1.77	.	Q	.	V	.	.	.
15.450	0.5682	1.77	.	Q	.	V	.	.	.
15.467	0.5707	1.78	.	Q	.	V	.	.	.
15.483	0.5731	1.78	.	Q	.	V	.	.	.
15.500	0.5756	1.78	.	Q	.	V	.	.	.
15.517	0.5780	1.79	.	Q	.	V	.	.	.
15.533	0.5805	1.79	.	Q	.	V	.	.	.
15.550	0.5830	1.79	.	Q	.	V	.	.	.
15.567	0.5855	1.80	.	Q	.	V	.	.	.
15.583	0.5880	1.81	.	Q	.	V	.	.	.
15.600	0.5905	1.84	.	Q	.	V	.	.	.
15.617	0.5931	1.87	.	Q	.	V	.	.	.
15.633	0.5957	1.90	.	Q	.	V	.	.	.
15.650	0.5984	1.93	.	Q	.	V	.	.	.
15.667	0.6011	1.96	.	Q	.	V	.	.	.
15.683	0.6038	1.99	.	Q	.	V	.	.	.
15.700	0.6066	2.02	.	Q	.	V	.	.	.
15.717	0.6094	2.06	.	Q	.	V	.	.	.
15.733	0.6124	2.17	.	Q	.	V	.	.	.
15.750	0.6156	2.31	.	Q	.	V	.	.	.
15.767	0.6190	2.45	.	Q	.	V	.	.	.
15.783	0.6226	2.59	.	Q	.	V	.	.	.
15.800	0.6263	2.73	.	Q	.	V	.	.	.
15.817	0.6303	2.87	.	Q	.	V	.	.	.
15.833	0.6344	3.01	.	Q	.	V	.	.	.
15.850	0.6388	3.15	.	Q	.	V	.	.	.
15.867	0.6433	3.29	.	Q	.	V	.	.	.
15.883	0.6481	3.44	.	Q	.	V	.	.	.

15.900	0.6530	3.58	.	Q	.	V	.	.	.
15.917	0.6581	3.72	.	.Q	.	V	.	.	.
15.933	0.6634	3.87	.	.Q	.	V	.	.	.
15.950	0.6690	4.01	.	.Q	.	V	.	.	.
15.967	0.6747	4.15	.	.Q	.	V	.	.	.
15.983	0.6806	4.30	.	.Q	.	V	.	.	.
16.000	0.6867	4.44	.	.Q	.	V	.	.	.
16.017	0.6936	5.02	.	.Q	.	V	.	.	.
16.033	0.7020	6.05	.	.Q	.	V	.	.	.
16.050	0.7117	7.07	.	.Q	.	V	.	.	.
16.067	0.7229	8.09	.	.Q	.	V	.	.	.
16.083	0.7354	9.11	.	.Q	.	V	.	.	.
16.100	0.7494	10.14	.	.Q	.	V	.	.	.
16.117	0.7647	11.16	.	.Q	.	V	.	.	.
16.133	0.7815	12.18	.	.Q	.	V	.	.	.
16.150	0.7999	13.36	.	.Q	.	V	.	.	.
16.167	0.8168	12.29	.	.Q	.	V	.	.	.
16.183	0.8321	11.04	.	.Q	.	V	.	.	.
16.200	0.8455	9.79	.	.Q	.	V	.	.	.
16.217	0.8573	8.54	.	.Q	.	V	.	.	.
16.233	0.8674	7.29	.	.Q	.	V	.	.	.
16.250	0.8757	6.04	.	.Q	.	V	.	.	.
16.267	0.8823	4.79	.	.Q	.	V	.	.	.
16.283	0.8872	3.54	.	.Q	.	V	.	.	.
16.300	0.8907	2.57	.	.Q	.	V	.	.	.
16.317	0.8940	2.41	.	.Q	.	V	.	.	.
16.333	0.8972	2.31	.	.Q	.	V	.	.	.
16.350	0.9002	2.20	.	.Q	.	V	.	.	.
16.367	0.9031	2.09	.	.Q	.	V	.	.	.
16.383	0.9058	1.99	.	.Q	.	V	.	.	.
16.400	0.9084	1.88	.	.Q	.	V	.	.	.
16.417	0.9109	1.78	.	.Q	.	V	.	.	.
16.433	0.9132	1.67	.	.Q	.	V	.	.	.
16.450	0.9154	1.62	.	.Q	.	V	.	.	.
16.467	0.9176	1.61	.	.Q	.	V	.	.	.
16.483	0.9198	1.60	.	.Q	.	V	.	.	.
16.500	0.9220	1.59	.	.Q	.	V	.	.	.
16.517	0.9242	1.58	.	.Q	.	V	.	.	.
16.533	0.9263	1.57	.	.Q	.	V	.	.	.
16.550	0.9285	1.56	.	.Q	.	V	.	.	.
16.567	0.9306	1.55	.	.Q	.	V	.	.	.
16.583	0.9327	1.53	.	.Q	.	V	.	.	.
16.600	0.9348	1.51	.	.Q	.	V	.	.	.
16.617	0.9368	1.48	.	.Q	.	V	.	.	.
16.633	0.9388	1.45	.	.Q	.	V	.	.	.
16.650	0.9408	1.43	.	.Q	.	V	.	.	.
16.667	0.9427	1.40	.	.Q	.	V	.	.	.
16.683	0.9446	1.37	.	.Q	.	V	.	.	.
16.700	0.9465	1.34	.	.Q	.	V	.	.	.
16.717	0.9483	1.31	.	.Q	.	V	.	.	.
16.733	0.9500	1.29	.	.Q	.	V	.	.	.
16.750	0.9518	1.27	.	.Q	.	V	.	.	.
16.767	0.9535	1.25	.	.Q	.	V	.	.	.
16.783	0.9552	1.23	.	.Q	.	V	.	.	.
16.800	0.9569	1.21	.	.Q	.	V	.	.	.
16.817	0.9585	1.19	.	.Q	.	V	.	.	.
16.833	0.9601	1.17	.	.Q	.	V	.	.	.
16.850	0.9617	1.15	.	.Q	.	V	.	.	.
16.867	0.9633	1.13	.	.Q	.	V	.	.	.
16.883	0.9648	1.12	.	.Q	.	V	.	.	.
16.900	0.9664	1.10	.	.Q	.	V	.	.	.
16.917	0.9679	1.09	.	.Q	.	V	.	.	.
16.933	0.9693	1.08	.	.Q	.	V	.	.	.
16.950	0.9708	1.06	.	.Q	.	V	.	.	.

16.967	0.9722	1.05	. Q	.	.	. V	.
16.983	0.9737	1.03	. Q	.	.	. V	.
17.000	0.9751	1.02	. Q	.	.	. V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	520.0
20%	150.0
30%	100.0
40%	70.0
50%	60.0
60%	50.0
70%	35.0
80%	25.0
90%	15.0

 FLOW PROCESS FROM NODE 207.00 TO NODE 208.00 IS CODE = 4

 >>>>MODEL PIPEFLOW ROUTING OF STREAM #1<<<<<<

MODEL PIPEFLOW ROUTING OF STREAM 1 WHERE
 STORAGE EFFECTS ARE NEGLECTED WITHIN THE PIPE, FLOW
 VELOCITIES ARE ESTIMATED BY ASSUMING STEADY FLOW FOR
 EACH UNIT INTERVAL(NORMAL DEPTH, Dn), AND FLOWS IN EXCESS
 OF (.82)(DIAMETER) ARE PONDED AT THE UPSTREAM INLET:
 UNIT INTERVAL FLOW VELOCITY COMPUTED USING Dn UP TO
 (0.938)(DIAMETER):

PIPELENGTH(FT) = 75.00 MANNINGS FACTOR = 0.013
 UPSTREAM ELEVATION(FT) = 769.00
 DOWNSTREAM ELEVATION(FT) = 760.00
 PIPE DIAMETER(FT) = 1.50

NORMAL DEPTH VELOCITY PIPE ROUTING RESULTS:

TIME (HRS)	INFLOW (CFS)	VELOCITY (FPS)	OUTFLOW (CFS)	UPSTREAM PONDING(AF)
15.000	1.36	8.02	1.36	0.000
15.017	1.37	8.08	1.37	0.000
15.033	1.38	8.13	1.38	0.000
15.050	1.39	8.18	1.39	0.000
15.067	1.40	8.24	1.40	0.000
15.083	1.41	8.29	1.41	0.000
15.100	1.42	8.35	1.42	0.000
15.117	1.43	8.40	1.43	0.000
15.133	1.44	8.45	1.44	0.000
15.150	1.45	8.54	1.45	0.000
15.167	1.47	8.68	1.47	0.000
15.183	1.50	8.81	1.50	0.000
15.200	1.52	8.95	1.52	0.000
15.217	1.54	9.09	1.54	0.000

15.233	1.57	9.22	1.57	0.000
15.250	1.59	9.36	1.59	0.000
15.267	1.61	9.49	1.61	0.000
15.283	1.64	9.63	1.64	0.000
15.300	1.65	9.73	1.65	0.000
15.317	1.67	9.82	1.67	0.000
15.333	1.68	9.91	1.68	0.000
15.350	1.70	9.99	1.70	0.000
15.367	1.71	10.08	1.71	0.000
15.383	1.73	10.17	1.73	0.000
15.400	1.74	10.26	1.74	0.000
15.417	1.76	10.35	1.76	0.000
15.433	1.77	10.42	1.77	0.000
15.450	1.77	10.44	1.77	0.000
15.467	1.78	10.46	1.78	0.000
15.483	1.78	10.48	1.78	0.000
15.500	1.78	10.50	1.78	0.000
15.517	1.79	10.52	1.79	0.000
15.533	1.79	10.53	1.79	0.000
15.550	1.79	10.55	1.79	0.000
15.567	1.80	10.57	1.80	0.000
15.583	1.81	10.66	1.81	0.000
15.600	1.84	10.74	1.84	0.000
15.617	1.87	10.77	1.87	0.000
15.633	1.90	10.81	1.90	0.000
15.650	1.93	10.85	1.93	0.000
15.667	1.96	10.89	1.96	0.000
15.683	1.99	10.93	1.99	0.000
15.700	2.02	10.96	2.02	0.000
15.717	2.06	11.01	2.06	0.000
15.733	2.17	11.15	2.16	0.000
15.750	2.31	11.32	2.30	0.000
15.767	2.45	11.50	2.44	0.000
15.783	2.59	11.67	2.58	0.000
15.800	2.73	11.85	2.72	0.000
15.817	2.87	12.02	2.86	0.000
15.833	3.01	12.19	3.00	0.000
15.850	3.15	12.37	3.14	0.000
15.867	3.29	12.54	3.29	0.000
15.883	3.44	12.72	3.43	0.000
15.900	3.58	12.90	3.57	0.000
15.917	3.72	13.06	3.71	0.000
15.933	3.87	13.19	3.86	0.000
15.950	4.01	13.33	4.00	0.000
15.967	4.15	13.47	4.14	0.000
15.983	4.30	13.61	4.29	0.000
16.000	4.44	13.74	4.43	0.000
16.017	5.02	14.30	4.99	0.000
16.033	6.05	15.16	5.99	0.000
16.050	7.07	15.91	7.01	0.000
16.067	8.09	16.54	8.03	0.000
16.083	9.11	17.14	9.06	0.000
16.100	10.14	17.70	10.08	0.000
16.117	11.16	18.21	11.11	0.000
16.133	12.18	18.58	12.13	0.000
16.150	13.36	19.01	13.30	0.000
16.167	12.29	18.62	12.35	0.000
16.183	11.04	18.17	11.11	0.000
16.200	9.79	17.51	9.85	0.000
16.217	8.54	16.81	8.61	0.000
16.233	7.29	16.07	7.36	0.000
16.250	6.04	15.15	6.11	0.000
16.267	4.79	14.08	4.86	0.000
16.283	3.54	12.85	3.62	0.000

16.300	2.57	11.64	2.64	0.000
16.317	2.41	11.45	2.43	0.000
16.333	2.31	11.31	2.32	0.000
16.350	2.20	11.18	2.21	0.000
16.367	2.09	11.05	2.10	0.000
16.383	1.99	10.92	2.00	0.000
16.400	1.88	10.79	1.89	0.000
16.417	1.78	10.45	1.78	0.000
16.433	1.67	9.83	1.67	0.000
16.450	1.62	9.51	1.62	0.000
16.467	1.61	9.45	1.61	0.000
16.483	1.60	9.39	1.60	0.000
16.500	1.59	9.33	1.59	0.000
16.517	1.58	9.27	1.58	0.000
16.533	1.57	9.21	1.57	0.000
16.550	1.56	9.15	1.56	0.000
16.567	1.55	9.09	1.55	0.000
16.583	1.53	9.03	1.53	0.000
16.600	1.51	8.88	1.51	0.000
16.617	1.48	8.72	1.48	0.000
16.633	1.45	8.55	1.45	0.000
16.650	1.43	8.39	1.43	0.000
16.667	1.40	8.22	1.40	0.000
16.683	1.37	8.06	1.37	0.000
16.700	1.34	7.90	1.34	0.000
16.717	1.31	7.73	1.31	0.000
16.733	1.29	7.58	1.29	0.000
16.750	1.27	7.47	1.27	0.000
16.767	1.25	7.36	1.25	0.000
16.783	1.23	7.24	1.23	0.000
16.800	1.21	7.13	1.21	0.000
16.817	1.19	7.02	1.19	0.000
16.833	1.17	6.90	1.17	0.000
16.850	1.15	6.79	1.15	0.000
16.867	1.13	6.68	1.13	0.000
16.883	1.12	6.58	1.12	0.000
16.900	1.10	6.50	1.10	0.000
16.917	1.09	6.42	1.09	0.000
16.933	1.08	6.33	1.08	0.000
16.950	1.06	6.25	1.06	0.000
16.967	1.05	6.16	1.05	0.000
16.983	1.03	6.08	1.03	0.000
17.000	1.02	6.00	1.02	0.000
17.017	1.01	5.92	1.01	0.000
17.033	1.00	5.86	1.00	0.000
17.050	0.99	5.82	0.99	0.000
17.067	0.98	5.77	0.98	0.000
17.083	0.97	5.72	0.97	0.000
17.100	0.96	5.67	0.96	0.000
17.117	0.96	5.62	0.96	0.000
17.133	0.95	5.58	0.95	0.000
17.150	0.94	5.53	0.94	0.000
17.167	0.93	5.48	0.93	0.000
17.183	0.92	5.44	0.92	0.000
17.200	0.92	5.40	0.92	0.000
17.217	0.91	5.36	0.91	0.000
17.233	0.90	5.32	0.90	0.000
17.250	0.90	5.28	0.90	0.000
17.267	0.89	5.23	0.89	0.000
17.283	0.88	5.19	0.88	0.000
17.300	0.88	5.15	0.88	0.000
17.317	0.87	5.11	0.87	0.000
17.333	0.86	5.08	0.86	0.000
17.350	0.86	5.05	0.86	0.000

17.367	0.85	5.01	0.85	0.000
17.383	0.85	4.98	0.85	0.000
17.400	0.84	4.94	0.84	0.000
17.417	0.83	4.91	0.83	0.000
17.433	0.83	4.87	0.83	0.000
17.450	0.82	4.84	0.82	0.000
17.467	0.82	4.81	0.82	0.000
17.483	0.81	4.78	0.81	0.000
17.500	0.81	4.75	0.81	0.000
17.517	0.80	4.72	0.80	0.000
17.533	0.80	4.69	0.80	0.000
17.550	0.79	4.66	0.79	0.000
17.567	0.79	4.63	0.79	0.000
17.583	0.78	4.60	0.78	0.000
17.600	0.78	4.58	0.78	0.000
17.617	0.77	4.55	0.77	0.000
17.633	0.77	4.53	0.77	0.000
17.650	0.76	4.50	0.76	0.000
17.667	0.76	4.48	0.76	0.000
17.683	0.76	4.45	0.76	0.000
17.700	0.75	4.43	0.75	0.000
17.717	0.75	4.40	0.75	0.000
17.733	0.74	4.38	0.74	0.000
17.750	0.74	4.35	0.74	0.000
17.767	0.74	4.33	0.74	0.000
17.783	0.73	4.31	0.73	0.000
17.800	0.73	4.29	0.73	0.000
17.817	0.72	4.27	0.72	0.000
17.833	0.72	4.24	0.72	0.000
17.850	0.72	4.22	0.72	0.000
17.867	0.71	4.20	0.71	0.000
17.883	0.71	4.18	0.71	0.000
17.900	0.71	4.16	0.71	0.000
17.917	0.70	4.14	0.70	0.000
17.933	0.70	4.12	0.70	0.000
17.950	0.70	4.10	0.70	0.000
17.967	0.69	4.08	0.69	0.000
17.983	0.69	4.06	0.69	0.000
18.000	0.69	4.04	0.69	0.000
18.017	0.68	4.02	0.68	0.000
18.033	0.67	3.96	0.67	0.000
18.050	0.65	3.83	0.65	0.000
18.067	0.63	3.71	0.63	0.000
18.083	0.61	3.58	0.61	0.000
18.100	0.59	3.45	0.59	0.000
18.117	0.56	3.32	0.56	0.000
18.133	0.54	3.20	0.54	0.000
18.150	0.52	3.07	0.52	0.000
18.167	0.50	2.95	0.50	0.000
18.183	0.49	2.90	0.49	0.000
18.200	0.49	2.88	0.49	0.000
18.217	0.49	2.87	0.49	0.000
18.233	0.49	2.86	0.49	0.000
18.250	0.48	2.84	0.48	0.000
18.267	0.48	2.83	0.48	0.000
18.283	0.48	2.81	0.48	0.000
18.300	0.48	2.80	0.48	0.000
18.317	0.47	2.78	0.47	0.000
18.333	0.47	2.77	0.47	0.000
18.350	0.47	2.76	0.47	0.000
18.367	0.47	2.75	0.47	0.000
18.383	0.46	2.73	0.46	0.000
18.400	0.46	2.72	0.46	0.000
18.417	0.46	2.71	0.46	0.000

18.433	0.46	2.70	0.46	0.000
18.450	0.46	2.68	0.46	0.000
18.467	0.45	2.67	0.45	0.000
18.483	0.45	2.66	0.45	0.000
18.500	0.45	2.65	0.45	0.000
18.517	0.45	2.64	0.45	0.000
18.533	0.45	2.62	0.45	0.000
18.550	0.44	2.61	0.44	0.000
18.567	0.44	2.60	0.44	0.000
18.583	0.44	2.59	0.44	0.000
18.600	0.44	2.58	0.44	0.000
18.617	0.44	2.57	0.44	0.000
18.633	0.43	2.56	0.43	0.000
18.650	0.43	2.55	0.43	0.000
18.667	0.43	2.54	0.43	0.000
18.683	0.43	2.52	0.43	0.000
18.700	0.43	2.51	0.43	0.000
18.717	0.43	2.50	0.43	0.000
18.733	0.42	2.49	0.42	0.000
18.750	0.42	2.48	0.42	0.000
18.767	0.42	2.47	0.42	0.000
18.783	0.42	2.46	0.42	0.000
18.800	0.42	2.45	0.42	0.000
18.817	0.42	2.44	0.42	0.000
18.833	0.41	2.43	0.41	0.000
18.850	0.41	2.42	0.41	0.000
18.867	0.41	2.42	0.41	0.000
18.883	0.41	2.41	0.41	0.000
18.900	0.41	2.40	0.41	0.000
18.917	0.41	2.39	0.41	0.000
18.933	0.40	2.38	0.40	0.000
18.950	0.40	2.37	0.40	0.000
18.967	0.40	2.36	0.40	0.000
18.983	0.40	2.35	0.40	0.000
19.000	0.40	2.34	0.40	0.000

FLOW PROCESS FROM NODE 208.00 TO NODE 208.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 1.50

SOIL-LOSS RATE, Fm, (INCH/HR) = 0.022

LOW LOSS FRACTION = 0.106

TIME OF CONCENTRATION(MIN.) = 11.05

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

USER SPECIFIED RAINFALL VALUES ARE USED:

RETURN FREQUENCY(YEARS) = 25

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.40

30-MINUTE POINT RAINFALL VALUE(INCHES) = 0.87

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.15

3-HOUR POINT RAINFALL VALUE(INCHES) = 1.94

6-HOUR POINT RAINFALL VALUE(INCHES) = 2.71

24-HOUR POINT RAINFALL VALUE(INCHES) = 4.49

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 0.47

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.10

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2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

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HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)

(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	1.0	2.1	3.1	4.1
14.000	0.1666	0.38	. Q	. V	.	.	.
14.017	0.1671	0.38	. Q	. V	.	.	.
14.033	0.1676	0.38	. Q	. V	.	.	.
14.050	0.1681	0.38	. Q	. V	.	.	.
14.067	0.1687	0.38	. Q	. V	.	.	.
14.083	0.1692	0.38	. Q	. V	.	.	.
14.100	0.1697	0.38	. Q	. V	.	.	.
14.117	0.1702	0.38	. Q	. V	.	.	.
14.133	0.1708	0.38	. Q	. V	.	.	.
14.150	0.1713	0.39	. Q	. V	.	.	.
14.167	0.1718	0.39	. Q	. V	.	.	.
14.183	0.1724	0.39	. Q	. V	.	.	.
14.200	0.1729	0.39	. Q	. V	.	.	.
14.217	0.1735	0.39	. Q	. V	.	.	.
14.233	0.1740	0.40	. Q	. V	.	.	.
14.250	0.1746	0.40	. Q	. V	.	.	.
14.267	0.1751	0.40	. Q	. V	.	.	.
14.283	0.1757	0.40	. Q	. V	.	.	.
14.300	0.1762	0.41	. Q	. V	.	.	.
14.317	0.1768	0.41	. Q	. V	.	.	.
14.333	0.1773	0.41	. Q	. V	.	.	.
14.350	0.1779	0.41	. Q	. V	.	.	.
14.367	0.1785	0.41	. Q	. V	.	.	.
14.383	0.1791	0.42	. Q	. V	.	.	.
14.400	0.1796	0.42	. Q	. V	.	.	.
14.417	0.1802	0.42	. Q	. V	.	.	.
14.433	0.1808	0.42	. Q	. V	.	.	.
14.450	0.1814	0.42	. Q	. V	.	.	.
14.467	0.1819	0.42	. Q	. V	.	.	.
14.483	0.1825	0.42	. Q	. V	.	.	.
14.500	0.1831	0.43	. Q	. V	.	.	.
14.517	0.1837	0.43	. Q	. V	.	.	.
14.533	0.1843	0.43	. Q	. V	.	.	.
14.550	0.1849	0.43	. Q	. V	.	.	.
14.567	0.1855	0.44	. Q	. V	.	.	.
14.583	0.1861	0.44	. Q	. V	.	.	.
14.600	0.1867	0.44	. Q	. V	.	.	.
14.617	0.1873	0.45	. Q	. V	.	.	.
14.633	0.1879	0.45	. Q	. V	.	.	.
14.650	0.1886	0.45	. Q	. V	.	.	.
14.667	0.1892	0.46	. Q	. V	.	.	.
14.683	0.1898	0.46	. Q	. V	.	.	.
14.700	0.1905	0.46	. Q	. V	.	.	.
14.717	0.1911	0.47	. Q	. V	.	.	.
14.733	0.1918	0.47	. Q	. V	.	.	.
14.750	0.1924	0.47	. Q	. V	.	.	.
14.767	0.1931	0.48	. Q	. V	.	.	.
14.783	0.1937	0.48	. Q	. V	.	.	.
14.800	0.1944	0.48	. Q	. V	.	.	.
14.817	0.1951	0.48	. Q	. V	.	.	.

14.833	0.1957	0.48	. Q	. V	.	.	.
14.850	0.1964	0.49	. Q	. V	.	.	.
14.867	0.1971	0.49	. Q	. V	.	.	.
14.883	0.1977	0.49	. Q	. V	.	.	.
14.900	0.1984	0.49	. Q	. V	.	.	.
14.917	0.1991	0.50	. Q	. V	.	.	.
14.933	0.1998	0.50	. Q	. V	.	.	.
14.950	0.2005	0.51	. Q	. V	.	.	.
14.967	0.2012	0.51	. Q	. V	.	.	.
14.983	0.2019	0.52	. Q	. V	.	.	.
15.000	0.2027	0.53	. Q	. V	.	.	.
15.017	0.2034	0.53	. Q	. V	.	.	.
15.033	0.2041	0.54	. Q	. V	.	.	.
15.050	0.2049	0.54	. Q	. V	.	.	.
15.067	0.2056	0.55	. Q	. V	.	.	.
15.083	0.2064	0.55	. Q	. V	.	.	.
15.100	0.2072	0.56	. Q	. V	.	.	.
15.117	0.2079	0.56	. Q	. V	.	.	.
15.133	0.2087	0.56	. Q	. V	.	.	.
15.150	0.2095	0.57	. Q	. V	.	.	.
15.167	0.2103	0.57	. Q	. V	.	.	.
15.183	0.2111	0.58	. Q	. V	.	.	.
15.200	0.2119	0.58	. Q	. V	.	.	.
15.217	0.2127	0.58	. Q	. V	.	.	.
15.233	0.2135	0.59	. Q	. V	.	.	.
15.250	0.2143	0.59	. Q	. V	.	.	.
15.267	0.2151	0.59	. Q	. V	.	.	.
15.283	0.2159	0.60	. Q	. V	.	.	.
15.300	0.2168	0.60	. Q	. V	.	.	.
15.317	0.2176	0.61	. Q	. V	.	.	.
15.333	0.2185	0.62	. Q	. V	.	.	.
15.350	0.2193	0.62	. Q	. V	.	.	.
15.367	0.2202	0.63	. Q	. V	.	.	.
15.383	0.2210	0.63	. Q	. V	.	.	.
15.400	0.2219	0.64	. Q	. V	.	.	.
15.417	0.2228	0.64	. Q	. V	.	.	.
15.433	0.2237	0.65	. Q	. V	.	.	.
15.450	0.2246	0.65	. Q	. V	.	.	.
15.467	0.2255	0.66	. Q	. V	.	.	.
15.483	0.2264	0.66	. Q	. V	.	.	.
15.500	0.2273	0.66	. Q	. V	.	.	.
15.517	0.2282	0.66	. Q	. V	.	.	.
15.533	0.2291	0.66	. Q	. V	.	.	.
15.550	0.2301	0.66	. Q	. V	.	.	.
15.567	0.2310	0.66	. Q	. V	.	.	.
15.583	0.2319	0.67	. Q	. V	.	.	.
15.600	0.2328	0.67	. Q	. V	.	.	.
15.617	0.2337	0.67	. Q	. V	.	.	.
15.633	0.2347	0.67	. Q	. V	.	.	.
15.650	0.2356	0.69	. Q	. V	.	.	.
15.667	0.2366	0.72	. Q	. V	.	.	.
15.683	0.2376	0.75	. Q	. V	.	.	.
15.700	0.2387	0.79	. Q	. V	.	.	.
15.717	0.2398	0.82	. Q	. V	.	.	.
15.733	0.2410	0.85	. Q	. V	.	.	.
15.750	0.2422	0.88	. Q	. V	.	.	.
15.767	0.2435	0.91	. Q	. V	.	.	.
15.783	0.2448	0.95	. Q	.V	.	.	.
15.800	0.2461	0.98	. Q	.V	.	.	.
15.817	0.2475	1.01	. Q	.V	.	.	.
15.833	0.2490	1.04	. Q	.V	.	.	.
15.850	0.2504	1.08	. Q	.V	.	.	.
15.867	0.2520	1.12	. Q	.V	.	.	.
15.883	0.2536	1.15	. Q	.V	.	.	.

15.900	0.2552	1.19	.	.Q	.V	.	.
15.917	0.2569	1.22	.	.Q	.V	.	.
15.933	0.2586	1.26	.	.Q	.V	.	.
15.950	0.2604	1.29	.	.Q	.V	.	.
15.967	0.2622	1.33	.	.Q	.V	.	.
15.983	0.2641	1.37	.	.Q	.V	.	.
16.000	0.2661	1.40	.	.Q	.V	.	.
16.017	0.2682	1.54	.	.Q	.V	.	.
16.033	0.2706	1.79	.	.Q	.V	.	.
16.050	0.2734	2.03	.	.Q	.V	.	.
16.067	0.2766	2.27	.	.Q	.V	.	.
16.083	0.2800	2.51	.	.Q	.V	.	.
16.100	0.2838	2.76	.	.Q	.V	.	.
16.117	0.2879	3.00	.	.Q	.V	.	.
16.133	0.2924	3.24	.	.Q	.V	.	.
16.150	0.2972	3.49	.	.Q	.V	.	.
16.167	0.3024	3.73	.	.Q	.V	.	.
16.183	0.3080	4.11	.	.Q	.V	.	.
16.200	0.3135	3.97	.	.Q	.V	.	.
16.217	0.3185	3.67	.	.Q	.V	.	.
16.233	0.3232	3.37	.	.Q	.V	.	.
16.250	0.3274	3.07	.	.Q	.V	.	.
16.267	0.3312	2.77	.	.Q	.V	.	.
16.283	0.3346	2.47	.	.Q	.V	.	.
16.300	0.3376	2.17	.	.Q	.V	.	.
16.317	0.3402	1.87	.	.Q	.V	.	.
16.333	0.3423	1.57	.	.Q	.V	.	.
16.350	0.3441	1.27	.	.Q	.V	.	.
16.367	0.3454	0.97	.	.Q	.V	.	.
16.383	0.3465	0.78	.	.Q	.V	.	.
16.400	0.3475	0.77	.	.Q	.V	.	.
16.417	0.3486	0.75	.	.Q	.V	.	.
16.433	0.3496	0.74	.	.Q	.V	.	.
16.450	0.3506	0.73	.	.Q	.V	.	.
16.467	0.3516	0.72	.	.Q	.V	.	.
16.483	0.3526	0.70	.	.Q	.V	.	.
16.500	0.3535	0.69	.	.Q	.V	.	.
16.517	0.3544	0.68	.	.Q	.V	.	.
16.533	0.3554	0.66	.	.Q	.V	.	.
16.550	0.3563	0.65	.	.Q	.V	.	.
16.567	0.3571	0.64	.	.Q	.V	.	.
16.583	0.3580	0.63	.	.Q	.V	.	.
16.600	0.3589	0.62	.	.Q	.V	.	.
16.617	0.3597	0.61	.	.Q	.V	.	.
16.633	0.3605	0.60	.	.Q	.V	.	.
16.650	0.3613	0.58	.	.Q	.V	.	.
16.667	0.3621	0.57	.	.Q	.V	.	.
16.683	0.3629	0.56	.	.Q	.V	.	.
16.700	0.3636	0.55	.	.Q	.V	.	.
16.717	0.3644	0.54	.	.Q	.V	.	.
16.733	0.3651	0.53	.	.Q	.V	.	.
16.750	0.3658	0.52	.	.Q	.V	.	.
16.767	0.3665	0.51	.	.Q	.V	.	.
16.783	0.3672	0.51	.	.Q	.V	.	.
16.800	0.3679	0.50	.	.Q	.V	.	.
16.817	0.3686	0.49	.	.Q	.V	.	.
16.833	0.3693	0.49	.	.Q	.V	.	.
16.850	0.3699	0.48	.	.Q	.V	.	.
16.867	0.3706	0.47	.	.Q	.V	.	.
16.883	0.3712	0.47	.	.Q	.V	.	.
16.900	0.3719	0.46	.	.Q	.V	.	.
16.917	0.3725	0.45	.	.Q	.V	.	.
16.933	0.3731	0.45	.	.Q	.V	.	.
16.950	0.3737	0.44	.	.Q	.V	.	.

16.967	0.3743	0.44	.	.Q	.	.	.V	.
16.983	0.3749	0.43	.	.Q	.	.	.V	.
17.000	0.3755	0.43	.	.Q	.	.	.V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	815.0
20%	195.0
30%	130.0
40%	90.0
50%	75.0
60%	65.0
70%	45.0
80%	30.0
90%	15.0

 FLOW PROCESS FROM NODE 228.00 TO NODE 228.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

 STREAM HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	5.0	10.0	15.0	20.0
15.800	0.8721	3.70	.	.Q	.	.V	.
15.817	0.8774	3.87	.	.Q	.	.V	.
15.833	0.8830	4.05	.	.Q	.	.V	.
15.850	0.8888	4.22	.	.Q	.	.V	.
15.867	0.8948	4.40	.	.Q	.	.V	.
15.883	0.9012	4.58	.	.Q	.	.V	.
15.900	0.9077	4.76	.	.Q	.	.V	.
15.917	0.9145	4.94	.	.Q	.	.V	.
15.933	0.9216	5.12	.	.Q	.	.V	.
15.950	0.9289	5.30	.	.Q	.	.V	.
15.967	0.9364	5.48	.	.Q	.	.V	.
15.983	0.9442	5.65	.	.Q	.	.V	.
16.000	0.9522	5.83	.	.Q	.	.V	.
16.017	0.9612	6.53	.	.Q	.	.V	.
16.033	0.9719	7.77	.	.Q	.	.V	.
16.050	0.9844	9.04	.	.Q	.	.V	.
16.067	0.9986	10.31	.	.Q	.	.V	.
16.083	1.0145	11.57	.	.Q	.	.V	.
16.100	1.0322	12.84	.	.Q	.	.V	.
16.117	1.0516	14.11	.	.Q	.	.V	.
16.133	1.0728	15.37	.	.Q	.	.V	.
16.150	1.0959	16.78	.	.Q	.	.V	.
16.167	1.1181	16.08	.	.Q	.	.V	.
16.183	1.1390	15.21	.	.Q	.	.V	.
16.200	1.1581	13.82	.	.Q	.	.V	.
16.217	1.1750	12.28	.	.Q	.	.V	.
16.233	1.1897	10.73	.	.Q	.	.V	.
16.250	1.2024	9.18	.	.Q	.	.V	.

16.267	1.2129	7.63	.	.	Q	.	V.	.
16.283	1.2213	6.09	.	.	Q	.	V.	.
16.300	1.2279	4.81	.	.	Q.	.	V.	.
16.317	1.2338	4.29	.	.	Q	.	V.	.
16.333	1.2392	3.88	.	.	Q	.	V.	.
16.350	1.2440	3.48	.	.	Q	.	V.	.
16.367	1.2482	3.07	.	.	Q	.	V.	.
16.383	1.2520	2.78	.	.	Q	.	V	.
16.400	1.2557	2.66	.	.	Q	.	V	.
16.417	1.2592	2.54	.	.	Q	.	V	.
16.433	1.2625	2.41	.	.	Q	.	V	.
16.450	1.2657	2.35	.	.	Q	.	V	.
16.467	1.2689	2.32	.	.	Q	.	V	.
16.483	1.2721	2.30	.	.	Q	.	V	.
16.500	1.2752	2.28	.	.	Q	.	V	.
16.517	1.2783	2.25	.	.	Q	.	V	.
16.533	1.2814	2.23	.	.	Q	.	V	.
16.550	1.2844	2.21	.	.	Q	.	V	.
16.567	1.2874	2.18	.	.	Q	.	V	.
16.583	1.2904	2.16	.	.	Q	.	.V	.
16.600	1.2934	2.13	.	.	Q	.	.V	.
16.617	1.2962	2.09	.	.	Q	.	.V	.
16.633	1.2991	2.05	.	.	Q	.	.V	.
16.650	1.3018	2.01	.	.	Q	.	.V	.
16.667	1.3045	1.97	.	.	Q	.	.V	.
16.683	1.3072	1.93	.	.	Q	.	.V	.
16.700	1.3098	1.89	.	.	Q	.	.V	.
16.717	1.3124	1.85	.	.	Q	.	.V	.
16.733	1.3149	1.82	.	.	Q	.	.V	.
16.750	1.3173	1.79	.	.	Q	.	.V	.
16.767	1.3198	1.76	.	.	Q	.	.V	.
16.783	1.3221	1.74	.	.	Q	.	.V	.
16.800	1.3245	1.71	.	.	Q	.	.V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1009.0
10%	615.0
20%	175.0
30%	110.0
40%	75.0
50%	65.0
60%	55.0
70%	40.0
80%	30.0
90%	20.0

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
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 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * THE VILLAGE - TTM 17439 *
- * 100-YR PROPOSED CONDITION - LINE N CALIB FD *
- * MCHANDOO *

FILE NAME: PROP00N.DAT
 TIME/DATE OF STUDY: 13:57 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J of the Hydrology Manual provides estimates of runoff hydrograph and runoff volume for watersheds whose time of concentration is less than 25 minutes. The PROGRAM User should check the applicability of using the small area unit hydrograph procedures, and follow the guidelines in Sections J and K.5 in complex watershed modeling.

 FLOW PROCESS FROM NODE 202.00 TO NODE 207.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
 TOTAL CATCHMENT AREA(ACRES) = 4.30
 SOIL-LOSS RATE, Fm, (INCH/HR) = 0.068
 LOW LOSS FRACTION = 0.097
 TIME OF CONCENTRATION(MIN.) = 8.47
 SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
 USER SPECIFIED RAINFALL VALUES ARE USED:
 RETURN FREQUENCY(YEARS) = 100
 5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.56
 30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.17
 1-HOUR POINT RAINFALL VALUE(INCHES) = 1.56
 3-HOUR POINT RAINFALL VALUE(INCHES) = 2.61
 6-HOUR POINT RAINFALL VALUE(INCHES) = 3.61
 24-HOUR POINT RAINFALL VALUE(INCHES) = 6.05

 TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.78
 TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.39

=====

24 - HOUR STORM
 RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	4.7	9.4	14.1	18.8
14.000	0.6494	1.37	. Q	. V	.	.	.
14.017	0.6513	1.38	. Q	. V	.	.	.
14.033	0.6532	1.38	. Q	. V	.	.	.
14.050	0.6551	1.39	. Q	. V	.	.	.
14.067	0.6571	1.40	. Q	. V	.	.	.
14.083	0.6590	1.41	. Q	. V	.	.	.
14.100	0.6609	1.41	. Q	. V	.	.	.
14.117	0.6629	1.42	. Q	. V	.	.	.
14.133	0.6649	1.43	. Q	. V	.	.	.
14.150	0.6669	1.44	. Q	. V	.	.	.
14.167	0.6688	1.45	. Q	. V	.	.	.
14.183	0.6709	1.45	. Q	. V	.	.	.
14.200	0.6729	1.46	. Q	. V	.	.	.
14.217	0.6749	1.46	. Q	. V	.	.	.
14.233	0.6769	1.47	. Q	. V	.	.	.
14.250	0.6789	1.47	. Q	. V	.	.	.
14.267	0.6810	1.48	. Q	. V	.	.	.
14.283	0.6830	1.48	. Q	. V	.	.	.
14.300	0.6851	1.49	. Q	. V	.	.	.
14.317	0.6871	1.49	. Q	. V	.	.	.
14.333	0.6892	1.50	. Q	. V	.	.	.
14.350	0.6913	1.51	. Q	. V	.	.	.
14.367	0.6934	1.52	. Q	. V	.	.	.
14.383	0.6955	1.53	. Q	. V	.	.	.
14.400	0.6976	1.54	. Q	. V	.	.	.
14.417	0.6998	1.56	. Q	. V	.	.	.
14.433	0.7019	1.57	. Q	. V	.	.	.
14.450	0.7041	1.58	. Q	. V	.	.	.
14.467	0.7063	1.58	. Q	. V	.	.	.
14.483	0.7084	1.59	. Q	. V	.	.	.
14.500	0.7106	1.60	. Q	. V	.	.	.
14.517	0.7129	1.60	. Q	. V	.	.	.
14.533	0.7151	1.61	. Q	. V	.	.	.
14.550	0.7173	1.61	. Q	. V	.	.	.
14.567	0.7195	1.62	. Q	. V	.	.	.
14.583	0.7218	1.62	. Q	. V	.	.	.
14.600	0.7240	1.63	. Q	. V	.	.	.
14.617	0.7263	1.65	. Q	. V	.	.	.
14.633	0.7286	1.66	. Q	. V	.	.	.
14.650	0.7309	1.67	. Q	. V	.	.	.
14.667	0.7332	1.69	. Q	. V	.	.	.
14.683	0.7355	1.70	. Q	. V	.	.	.
14.700	0.7379	1.71	. Q	. V	.	.	.
14.717	0.7403	1.73	. Q	. V	.	.	.
14.733	0.7427	1.74	. Q	. V	.	.	.
14.750	0.7451	1.75	. Q	. V	.	.	.
14.767	0.7475	1.76	. Q	. V	.	.	.
14.783	0.7499	1.77	. Q	. V	.	.	.
14.800	0.7524	1.78	. Q	. V	.	.	.
14.817	0.7548	1.78	. Q	. V	.	.	.

14.833	0.7573	1.79	.	Q	.	V	.	.	.
14.850	0.7598	1.80	.	Q	.	V	.	.	.
14.867	0.7623	1.81	.	Q	.	V	.	.	.
14.883	0.7648	1.82	.	Q	.	V	.	.	.
14.900	0.7673	1.84	.	Q	.	V	.	.	.
14.917	0.7699	1.86	.	Q	.	V	.	.	.
14.933	0.7724	1.88	.	Q	.	V	.	.	.
14.950	0.7751	1.89	.	Q	.	V	.	.	.
14.967	0.7777	1.91	.	Q	.	V	.	.	.
14.983	0.7804	1.93	.	Q	.	V	.	.	.
15.000	0.7830	1.95	.	Q	.	V	.	.	.
15.017	0.7858	1.97	.	Q	.	V	.	.	.
15.033	0.7885	1.98	.	Q	.	V	.	.	.
15.050	0.7912	2.00	.	Q	.	V	.	.	.
15.067	0.7940	2.01	.	Q	.	V	.	.	.
15.083	0.7968	2.02	.	Q	.	V	.	.	.
15.100	0.7996	2.03	.	Q	.	V	.	.	.
15.117	0.8024	2.04	.	Q	.	V	.	.	.
15.133	0.8052	2.05	.	Q	.	V	.	.	.
15.150	0.8081	2.06	.	Q	.	V	.	.	.
15.167	0.8109	2.08	.	Q	.	V	.	.	.
15.183	0.8138	2.11	.	Q	.	V	.	.	.
15.200	0.8168	2.14	.	Q	.	V	.	.	.
15.217	0.8198	2.17	.	Q	.	V	.	.	.
15.233	0.8228	2.20	.	Q	.	V	.	.	.
15.250	0.8259	2.23	.	Q	.	V	.	.	.
15.267	0.8290	2.26	.	Q	.	V	.	.	.
15.283	0.8321	2.29	.	Q	.	V	.	.	.
15.300	0.8353	2.31	.	Q	.	V	.	.	.
15.317	0.8385	2.33	.	Q	.	V	.	.	.
15.333	0.8418	2.35	.	Q	.	V	.	.	.
15.350	0.8450	2.36	.	Q	.	V	.	.	.
15.367	0.8483	2.38	.	Q	.	V	.	.	.
15.383	0.8516	2.40	.	Q	.	V	.	.	.
15.400	0.8549	2.41	.	Q	.	V	.	.	.
15.417	0.8583	2.43	.	Q	.	V	.	.	.
15.433	0.8616	2.45	.	Q	.	V	.	.	.
15.450	0.8650	2.46	.	Q	.	V	.	.	.
15.467	0.8685	2.49	.	Q	.	V	.	.	.
15.483	0.8719	2.51	.	Q	.	V	.	.	.
15.500	0.8754	2.53	.	Q	.	V	.	.	.
15.517	0.8789	2.55	.	Q	.	V	.	.	.
15.533	0.8825	2.58	.	Q	.	V	.	.	.
15.550	0.8860	2.60	.	Q	.	V	.	.	.
15.567	0.8897	2.62	.	Q	.	V	.	.	.
15.583	0.8933	2.65	.	Q	.	V	.	.	.
15.600	0.8970	2.69	.	Q	.	V	.	.	.
15.617	0.9008	2.73	.	Q	.	V	.	.	.
15.633	0.9046	2.77	.	Q	.	V	.	.	.
15.650	0.9084	2.81	.	Q	.	V	.	.	.
15.667	0.9124	2.86	.	Q	.	V	.	.	.
15.683	0.9164	2.90	.	Q	.	V	.	.	.
15.700	0.9204	2.94	.	Q	.	V	.	.	.
15.717	0.9245	2.99	.	Q	.	V	.	.	.
15.733	0.9288	3.08	.	Q	.	V	.	.	.
15.750	0.9332	3.24	.	Q	.	.V	.	.	.
15.767	0.9379	3.39	.	Q	.	.V	.	.	.
15.783	0.9428	3.55	.	Q	.	.V	.	.	.
15.800	0.9479	3.71	.	Q	.	.V	.	.	.
15.817	0.9532	3.86	.	Q	.	.V	.	.	.
15.833	0.9588	4.02	.	Q	.	.V	.	.	.
15.850	0.9645	4.18	.	Q	.	.V	.	.	.
15.867	0.9705	4.34	.	Q	.	.V	.	.	.
15.883	0.9767	4.53	.	Q	.	.V	.	.	.

15.900	0.9833	4.73	.	Q	.	V	.	.	.
15.917	0.9900	4.93	.	Q	.	V	.	.	.
15.933	0.9971	5.13	.	Q	.	V	.	.	.
15.950	1.0044	5.33	.	.Q	.	V	.	.	.
15.967	1.0121	5.53	.	.Q	.	V	.	.	.
15.983	1.0200	5.73	.	.Q	.	V	.	.	.
16.000	1.0281	5.93	.	.Q	.	V	.	.	.
16.017	1.0375	6.78	.	.Q	.	V	.	.	.
16.033	1.0489	8.29	.	.	Q	V	.	.	.
16.050	1.0624	9.80	.	.	Q	V	.	.	.
16.067	1.0779	11.31	.	.	Q	V	.	.	.
16.083	1.0956	12.82	.	.	V	Q	.	.	.
16.100	1.1153	14.32	.	.	V	Q	.	.	.
16.117	1.1371	15.83	.	.	V	Q	.	.	.
16.133	1.1610	17.34	.	.	V	Q	.	.	.
16.150	1.1869	18.80	.	.	V	Q	.	.	.
16.167	1.2103	16.95	.	.	V	Q	.	.	.
16.183	1.2311	15.14	.	.	V	Q	.	.	.
16.200	1.2495	13.33	.	.	Q	V	.	.	.
16.217	1.2654	11.53	.	.	Q	V	.	.	.
16.233	1.2788	9.72	.	.	Q	V	.	.	.
16.250	1.2897	7.92	.	.	Q	V	.	.	.
16.267	1.2981	6.11	.	.	Q	V	.	.	.
16.283	1.3040	4.31	.	.	Q	V	.	.	.
16.300	1.3088	3.44	.	.	Q	V	.	.	.
16.317	1.3133	3.31	.	.	Q	V	.	.	.
16.333	1.3177	3.17	.	.	Q	V	.	.	.
16.350	1.3219	3.04	.	.	Q	V	.	.	.
16.367	1.3259	2.90	.	.	Q	V	.	.	.
16.383	1.3297	2.77	.	.	Q	V	.	.	.
16.400	1.3333	2.64	.	.	Q	V	.	.	.
16.417	1.3368	2.50	.	.	Q	V	.	.	.
16.433	1.3401	2.39	.	.	Q	V	.	.	.
16.450	1.3433	2.36	.	.	Q	V	.	.	.
16.467	1.3465	2.33	.	.	Q	V	.	.	.
16.483	1.3497	2.31	.	.	Q	V	.	.	.
16.500	1.3528	2.29	.	.	Q	V	.	.	.
16.517	1.3560	2.26	.	.	Q	V	.	.	.
16.533	1.3591	2.24	.	.	Q	V	.	.	.
16.550	1.3621	2.22	.	.	Q	V	.	.	.
16.567	1.3651	2.19	.	.	Q	V	.	.	.
16.583	1.3681	2.16	.	.	Q	V	.	.	.
16.600	1.3710	2.13	.	.	Q	V	.	.	.
16.617	1.3739	2.09	.	.	Q	V	.	.	.
16.633	1.3768	2.06	.	.	Q	.V	.	.	.
16.650	1.3796	2.02	.	.	Q	.V	.	.	.
16.667	1.3823	1.99	.	.	Q	.V	.	.	.
16.683	1.3850	1.95	.	.	Q	.V	.	.	.
16.700	1.3876	1.92	.	.	Q	.V	.	.	.
16.717	1.3902	1.89	.	.	Q	.V	.	.	.
16.733	1.3928	1.86	.	.	Q	.V	.	.	.
16.750	1.3953	1.84	.	.	Q	.V	.	.	.
16.767	1.3978	1.81	.	.	Q	.V	.	.	.
16.783	1.4003	1.79	.	.	Q	.V	.	.	.
16.800	1.4027	1.76	.	.	Q	.V	.	.	.
16.817	1.4051	1.74	.	.	Q	.V	.	.	.
16.833	1.4075	1.72	.	.	Q	.V	.	.	.
16.850	1.4098	1.69	.	.	Q	.V	.	.	.
16.867	1.4121	1.67	.	.	Q	.V	.	.	.
16.883	1.4144	1.65	.	.	Q	.V	.	.	.
16.900	1.4166	1.64	.	.	Q	.V	.	.	.
16.917	1.4189	1.62	.	.	Q	.V	.	.	.
16.933	1.4211	1.60	.	.	Q	.V	.	.	.
16.950	1.4233	1.58	.	.	Q	.V	.	.	.

16.967	1.4254	1.57	. Q	.	.	. V	.
16.983	1.4275	1.55	. Q	.	.	. V	.
17.000	1.4297	1.53	. Q	.	.	. V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	535.0
20%	145.0
30%	90.0
40%	70.0
50%	60.0
60%	50.0
70%	35.0
80%	25.0
90%	15.0

 FLOW PROCESS FROM NODE 207.00 TO NODE 208.00 IS CODE = 4

>>>>MODEL PIPEFLOW ROUTING OF STREAM #1<<<<<<

MODEL PIPEFLOW ROUTING OF STREAM 1 WHERE
 STORAGE EFFECTS ARE NEGLECTED WITHIN THE PIPE, FLOW
 VELOCITIES ARE ESTIMATED BY ASSUMING STEADY FLOW FOR
 EACH UNIT INTERVAL(NORMAL DEPTH, Dn), AND FLOWS IN EXCESS
 OF (.82)(DIAMETER) ARE PONDED AT THE UPSTREAM INLET:
 UNIT INTERVAL FLOW VELOCITY COMPUTED USING Dn UP TO
 (0.938)(DIAMETER):

PIPELENGTH(FT) = 75.00 MANNINGS FACTOR = 0.013
 UPSTREAM ELEVATION(FT) = 769.00
 DOWNSTREAM ELEVATION(FT) = 760.00
 PIPE DIAMETER(FT) = 1.50

NORMAL DEPTH VELOCITY PIPE ROUTING RESULTS:

TIME (HRS)	INFLOW (CFS)	VELOCITY (FPS)	OUTFLOW (CFS)	UPSTREAM PONDING(AF)
15.000	1.95	10.87	1.95	0.000
15.017	1.97	10.90	1.97	0.000
15.033	1.98	10.91	1.98	0.000
15.050	2.00	10.93	1.99	0.000
15.067	2.01	10.94	2.01	0.000
15.083	2.02	10.96	2.02	0.000
15.100	2.03	10.97	2.03	0.000
15.117	2.04	10.98	2.04	0.000
15.133	2.05	11.00	2.05	0.000
15.150	2.06	11.01	2.06	0.000
15.167	2.08	11.03	2.08	0.000
15.183	2.11	11.07	2.11	0.000
15.200	2.14	11.11	2.14	0.000
15.217	2.17	11.14	2.17	0.000

15.233	2.20	11.18	2.20	0.000
15.250	2.23	11.22	2.22	0.000
15.267	2.26	11.25	2.25	0.000
15.283	2.29	11.29	2.28	0.000
15.300	2.31	11.32	2.31	0.000
15.317	2.33	11.35	2.33	0.000
15.333	2.35	11.37	2.35	0.000
15.350	2.36	11.39	2.36	0.000
15.367	2.38	11.41	2.38	0.000
15.383	2.40	11.43	2.40	0.000
15.400	2.41	11.45	2.41	0.000
15.417	2.43	11.47	2.43	0.000
15.433	2.45	11.49	2.44	0.000
15.450	2.46	11.51	2.46	0.000
15.467	2.49	11.54	2.48	0.000
15.483	2.51	11.57	2.51	0.000
15.500	2.53	11.59	2.53	0.000
15.517	2.55	11.62	2.55	0.000
15.533	2.58	11.65	2.57	0.000
15.550	2.60	11.68	2.60	0.000
15.567	2.62	11.71	2.62	0.000
15.583	2.65	11.74	2.64	0.000
15.600	2.69	11.79	2.68	0.000
15.617	2.73	11.84	2.72	0.000
15.633	2.77	11.89	2.77	0.000
15.650	2.81	11.95	2.81	0.000
15.667	2.86	12.00	2.85	0.000
15.683	2.90	12.05	2.90	0.000
15.700	2.94	12.11	2.94	0.000
15.717	2.99	12.16	2.98	0.000
15.733	3.08	12.28	3.07	0.000
15.750	3.24	12.47	3.23	0.000
15.767	3.39	12.67	3.38	0.000
15.783	3.55	12.86	3.54	0.000
15.800	3.71	13.04	3.70	0.000
15.817	3.86	13.19	3.85	0.000
15.833	4.02	13.34	4.01	0.000
15.850	4.18	13.49	4.17	0.000
15.867	4.34	13.65	4.33	0.000
15.883	4.53	13.83	4.52	0.000
15.900	4.73	14.02	4.72	0.000
15.917	4.93	14.21	4.92	0.000
15.933	5.13	14.41	5.12	0.000
15.950	5.33	14.60	5.32	0.000
15.967	5.53	14.77	5.52	0.000
15.983	5.73	14.92	5.71	0.000
16.000	5.93	15.07	5.91	0.000
16.017	6.78	15.70	6.73	0.000
16.033	8.29	16.66	8.21	0.000
16.050	9.80	17.51	9.72	0.000
16.067	11.31	18.26	11.23	0.000
16.083	12.82	18.81	12.74	0.000
16.100	14.32	19.37	14.25	0.000
16.117	15.83	19.82	15.76	0.000
16.133	17.34	20.30	17.27	0.000
16.150	18.80	20.76	18.74	0.000
16.167	16.95	20.17	17.03	0.000
16.183	15.14	19.62	15.23	0.000
16.200	13.33	19.00	13.42	0.000
16.217	11.53	18.34	11.62	0.000
16.233	9.72	17.47	9.81	0.000
16.250	7.92	16.44	8.01	0.000
16.267	6.11	15.21	6.21	0.000
16.283	4.31	13.62	4.42	0.000

16.300	3.44	12.72	3.50	0.000
16.317	3.31	12.56	3.31	0.000
16.333	3.17	12.39	3.18	0.000
16.350	3.04	12.23	3.05	0.000
16.367	2.90	12.06	2.91	0.000
16.383	2.77	11.89	2.78	0.000
16.400	2.64	11.73	2.65	0.000
16.417	2.50	11.56	2.51	0.000
16.433	2.39	11.42	2.40	0.000
16.450	2.36	11.38	2.36	0.000
16.467	2.33	11.35	2.34	0.000
16.483	2.31	11.32	2.31	0.000
16.500	2.29	11.29	2.29	0.000
16.517	2.26	11.26	2.27	0.000
16.533	2.24	11.23	2.24	0.000
16.550	2.22	11.20	2.22	0.000
16.567	2.19	11.17	2.20	0.000
16.583	2.16	11.14	2.17	0.000
16.600	2.13	11.09	2.13	0.000
16.617	2.09	11.05	2.10	0.000
16.633	2.06	11.01	2.06	0.000
16.650	2.02	10.96	2.03	0.000
16.667	1.99	10.92	1.99	0.000
16.683	1.95	10.87	1.96	0.000
16.700	1.92	10.83	1.92	0.000
16.717	1.89	10.79	1.89	0.000
16.733	1.86	10.76	1.86	0.000
16.750	1.84	10.73	1.84	0.000
16.767	1.81	10.67	1.81	0.000
16.783	1.79	10.53	1.79	0.000
16.800	1.76	10.39	1.76	0.000
16.817	1.74	10.24	1.74	0.000
16.833	1.72	10.10	1.72	0.000
16.850	1.69	9.96	1.69	0.000
16.867	1.67	9.84	1.67	0.000
16.883	1.65	9.74	1.65	0.000
16.900	1.64	9.63	1.64	0.000
16.917	1.62	9.53	1.62	0.000
16.933	1.60	9.42	1.60	0.000
16.950	1.58	9.32	1.58	0.000
16.967	1.57	9.21	1.57	0.000
16.983	1.55	9.11	1.55	0.000
17.000	1.53	9.01	1.53	0.000
17.017	1.52	8.92	1.52	0.000
17.033	1.50	8.84	1.50	0.000
17.050	1.49	8.76	1.49	0.000
17.067	1.47	8.68	1.47	0.000
17.083	1.46	8.59	1.46	0.000
17.100	1.45	8.51	1.45	0.000
17.117	1.43	8.43	1.43	0.000
17.133	1.42	8.35	1.42	0.000
17.150	1.41	8.28	1.41	0.000
17.167	1.39	8.21	1.39	0.000
17.183	1.38	8.14	1.38	0.000
17.200	1.37	8.08	1.37	0.000
17.217	1.36	8.01	1.36	0.000
17.233	1.35	7.94	1.35	0.000
17.250	1.34	7.88	1.34	0.000
17.267	1.33	7.81	1.33	0.000
17.283	1.32	7.75	1.32	0.000
17.300	1.31	7.69	1.31	0.000
17.317	1.30	7.64	1.30	0.000
17.333	1.29	7.58	1.29	0.000
17.350	1.28	7.53	1.28	0.000

17.367	1.27	7.48	1.27	0.000
17.383	1.26	7.42	1.26	0.000
17.400	1.25	7.37	1.25	0.000
17.417	1.24	7.31	1.24	0.000
17.433	1.23	7.26	1.23	0.000
17.450	1.23	7.22	1.23	0.000
17.467	1.22	7.17	1.22	0.000
17.483	1.21	7.12	1.21	0.000
17.500	1.20	7.08	1.20	0.000
17.517	1.19	7.03	1.19	0.000
17.533	1.19	6.99	1.19	0.000
17.550	1.18	6.94	1.18	0.000
17.567	1.17	6.90	1.17	0.000
17.583	1.16	6.86	1.16	0.000
17.600	1.16	6.82	1.16	0.000
17.617	1.15	6.78	1.15	0.000
17.633	1.14	6.74	1.14	0.000
17.650	1.14	6.70	1.14	0.000
17.667	1.13	6.66	1.13	0.000
17.683	1.12	6.62	1.12	0.000
17.700	1.12	6.58	1.12	0.000
17.717	1.11	6.54	1.11	0.000
17.733	1.11	6.51	1.11	0.000
17.750	1.10	6.47	1.10	0.000
17.767	1.09	6.44	1.09	0.000
17.783	1.09	6.40	1.09	0.000
17.800	1.08	6.37	1.08	0.000
17.817	1.08	6.33	1.08	0.000
17.833	1.07	6.30	1.07	0.000
17.850	1.06	6.27	1.06	0.000
17.867	1.06	6.24	1.06	0.000
17.883	1.05	6.21	1.05	0.000
17.900	1.05	6.18	1.05	0.000
17.917	1.04	6.15	1.04	0.000
17.933	1.04	6.11	1.04	0.000
17.950	1.03	6.08	1.03	0.000
17.967	1.03	6.05	1.03	0.000
17.983	1.02	6.02	1.02	0.000
18.000	1.01	5.93	1.01	0.000
18.017	0.99	5.84	0.99	0.000
18.033	0.98	5.74	0.98	0.000
18.050	0.96	5.64	0.96	0.000
18.067	0.94	5.55	0.94	0.000
18.083	0.93	5.45	0.93	0.000
18.100	0.91	5.35	0.91	0.000
18.117	0.89	5.26	0.89	0.000
18.133	0.88	5.16	0.88	0.000
18.150	0.86	5.07	0.86	0.000
18.167	0.85	4.98	0.85	0.000
18.183	0.83	4.88	0.83	0.000
18.200	0.81	4.79	0.81	0.000
18.217	0.80	4.70	0.80	0.000
18.233	0.78	4.60	0.78	0.000
18.250	0.77	4.51	0.77	0.000
18.267	0.75	4.43	0.75	0.000
18.283	0.75	4.40	0.75	0.000
18.300	0.74	4.38	0.74	0.000
18.317	0.74	4.36	0.74	0.000
18.333	0.74	4.33	0.74	0.000
18.350	0.73	4.31	0.73	0.000
18.367	0.73	4.29	0.73	0.000
18.383	0.73	4.27	0.73	0.000
18.400	0.72	4.25	0.72	0.000
18.417	0.72	4.23	0.72	0.000

18.433	0.72	4.21	0.72	0.000
18.450	0.71	4.20	0.71	0.000
18.467	0.71	4.18	0.71	0.000
18.483	0.71	4.16	0.71	0.000
18.500	0.70	4.14	0.70	0.000
18.517	0.70	4.12	0.70	0.000
18.533	0.70	4.10	0.70	0.000
18.550	0.69	4.09	0.69	0.000
18.567	0.69	4.07	0.69	0.000
18.583	0.69	4.05	0.69	0.000
18.600	0.69	4.03	0.69	0.000
18.617	0.68	4.02	0.68	0.000
18.633	0.68	4.00	0.68	0.000
18.650	0.68	3.98	0.68	0.000
18.667	0.67	3.97	0.67	0.000
18.683	0.67	3.95	0.67	0.000
18.700	0.67	3.93	0.67	0.000
18.717	0.67	3.92	0.67	0.000
18.733	0.66	3.90	0.66	0.000
18.750	0.66	3.89	0.66	0.000
18.767	0.66	3.87	0.66	0.000
18.783	0.66	3.86	0.66	0.000
18.800	0.65	3.84	0.65	0.000
18.817	0.65	3.83	0.65	0.000
18.833	0.65	3.81	0.65	0.000
18.850	0.65	3.80	0.65	0.000
18.867	0.64	3.78	0.64	0.000
18.883	0.64	3.77	0.64	0.000
18.900	0.64	3.75	0.64	0.000
18.917	0.64	3.74	0.64	0.000
18.933	0.63	3.73	0.63	0.000
18.950	0.63	3.71	0.63	0.000
18.967	0.63	3.70	0.63	0.000
18.983	0.63	3.68	0.63	0.000
19.000	0.62	3.67	0.62	0.000

FLOW PROCESS FROM NODE 208.00 TO NODE 208.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 1.50

SOIL-LOSS RATE, Fm, (INCH/HR) = 0.022

LOW LOSS FRACTION = 0.060

TIME OF CONCENTRATION(MIN.) = 10.88

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

USER SPECIFIED RAINFALL VALUES ARE USED:

RETURN FREQUENCY(YEARS) = 100

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.56

30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.17

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.56

3-HOUR POINT RAINFALL VALUE(INCHES) = 2.61

6-HOUR POINT RAINFALL VALUE(INCHES) = 3.61

24-HOUR POINT RAINFALL VALUE(INCHES) = 6.05

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 0.65

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.11

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2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

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HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)

(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	1.4	2.9	4.3	5.7
14.000	0.2347	0.50	. Q	. V	.	.	.
14.017	0.2354	0.50	. Q	. V	.	.	.
14.033	0.2361	0.51	. Q	. V	.	.	.
14.050	0.2368	0.51	. Q	. V	.	.	.
14.067	0.2375	0.51	. Q	. V	.	.	.
14.083	0.2382	0.51	. Q	. V	.	.	.
14.100	0.2389	0.51	. Q	. V	.	.	.
14.117	0.2396	0.51	. Q	. V	.	.	.
14.133	0.2403	0.52	. Q	. V	.	.	.
14.150	0.2411	0.52	. Q	. V	.	.	.
14.167	0.2418	0.52	. Q	. V	.	.	.
14.183	0.2425	0.52	. Q	. V	.	.	.
14.200	0.2432	0.52	. Q	. V	.	.	.
14.217	0.2439	0.53	. Q	. V	.	.	.
14.233	0.2447	0.53	. Q	. V	.	.	.
14.250	0.2454	0.53	. Q	. V	.	.	.
14.267	0.2461	0.54	. Q	. V	.	.	.
14.283	0.2469	0.54	. Q	. V	.	.	.
14.300	0.2476	0.54	. Q	. V	.	.	.
14.317	0.2484	0.55	. Q	. V	.	.	.
14.333	0.2491	0.55	. Q	. V	.	.	.
14.350	0.2499	0.55	. Q	. V	.	.	.
14.367	0.2507	0.56	. Q	. V	.	.	.
14.383	0.2514	0.56	. Q	. V	.	.	.
14.400	0.2522	0.56	. Q	. V	.	.	.
14.417	0.2530	0.57	. Q	. V	.	.	.
14.433	0.2538	0.57	. Q	. V	.	.	.
14.450	0.2546	0.57	. Q	. V	.	.	.
14.467	0.2554	0.57	. Q	. V	.	.	.
14.483	0.2561	0.57	. Q	. V	.	.	.
14.500	0.2569	0.58	. Q	. V	.	.	.
14.517	0.2577	0.58	. Q	. V	.	.	.
14.533	0.2585	0.58	. Q	. V	.	.	.
14.550	0.2593	0.58	. Q	. V	.	.	.
14.567	0.2601	0.59	. Q	. V	.	.	.
14.583	0.2610	0.59	. Q	. V	.	.	.
14.600	0.2618	0.60	. Q	. V	.	.	.
14.617	0.2626	0.60	. Q	. V	.	.	.
14.633	0.2634	0.61	. Q	. V	.	.	.
14.650	0.2643	0.61	. Q	. V	.	.	.
14.667	0.2651	0.62	. Q	. V	.	.	.
14.683	0.2660	0.62	. Q	. V	.	.	.
14.700	0.2669	0.63	. Q	. V	.	.	.
14.717	0.2677	0.63	. Q	. V	.	.	.
14.733	0.2686	0.64	. Q	. V	.	.	.
14.750	0.2695	0.64	. Q	. V	.	.	.
14.767	0.2704	0.64	. Q	. V	.	.	.
14.783	0.2713	0.65	. Q	. V	.	.	.
14.800	0.2722	0.65	. Q	. V	.	.	.
14.817	0.2731	0.65	. Q	. V	.	.	.

14.833	0.2740	0.66	. Q	. V	.	.	.
14.850	0.2749	0.66	. Q	. V	.	.	.
14.867	0.2758	0.66	. Q	. V	.	.	.
14.883	0.2767	0.66	. Q	. V	.	.	.
14.900	0.2776	0.67	. Q	. V	.	.	.
14.917	0.2785	0.67	. Q	. V	.	.	.
14.933	0.2795	0.68	. Q	. V	.	.	.
14.950	0.2804	0.68	. Q	. V	.	.	.
14.967	0.2814	0.69	. Q	. V	.	.	.
14.983	0.2823	0.70	. Q	. V	.	.	.
15.000	0.2833	0.71	. Q	. V	.	.	.
15.017	0.2843	0.72	. Q	. V	.	.	.
15.033	0.2853	0.72	. Q	. V	.	.	.
15.050	0.2863	0.73	. Q	. V	.	.	.
15.067	0.2873	0.74	. Q	. V	.	.	.
15.083	0.2883	0.75	. Q	. V	.	.	.
15.100	0.2894	0.75	. Q	. V	.	.	.
15.117	0.2904	0.76	. Q	. V	.	.	.
15.133	0.2915	0.76	. Q	. V	.	.	.
15.150	0.2925	0.77	. Q	. V	.	.	.
15.167	0.2936	0.77	. Q	. V	.	.	.
15.183	0.2947	0.78	. Q	. V	.	.	.
15.200	0.2957	0.78	. Q	. V	.	.	.
15.217	0.2968	0.79	. Q	. V	.	.	.
15.233	0.2979	0.79	. Q	. V	.	.	.
15.250	0.2990	0.80	. Q	. V	.	.	.
15.267	0.3001	0.80	. Q	. V	.	.	.
15.283	0.3012	0.81	. Q	. V	.	.	.
15.300	0.3024	0.82	. Q	. V	.	.	.
15.317	0.3035	0.83	. Q	. V	.	.	.
15.333	0.3047	0.83	. Q	. V	.	.	.
15.350	0.3058	0.84	. Q	. V	.	.	.
15.367	0.3070	0.85	. Q	. V	.	.	.
15.383	0.3082	0.86	. Q	. V	.	.	.
15.400	0.3094	0.87	. Q	. V	.	.	.
15.417	0.3106	0.88	. Q	. V	.	.	.
15.433	0.3118	0.89	. Q	. V	.	.	.
15.450	0.3130	0.89	. Q	. V	.	.	.
15.467	0.3143	0.90	. Q	. V	.	.	.
15.483	0.3155	0.91	. Q	. V	.	.	.
15.500	0.3168	0.91	. Q	. V	.	.	.
15.517	0.3180	0.92	. Q	. V	.	.	.
15.533	0.3193	0.92	. Q	. V	.	.	.
15.550	0.3206	0.93	. Q	. V	.	.	.
15.567	0.3219	0.93	. Q	. V	.	.	.
15.583	0.3232	0.94	. Q	. V	.	.	.
15.600	0.3245	0.94	. Q	. V	.	.	.
15.617	0.3258	0.95	. Q	. V	.	.	.
15.633	0.3271	0.95	. Q	. V	.	.	.
15.650	0.3284	0.97	. Q	. V	.	.	.
15.667	0.3298	1.00	. Q	. V	.	.	.
15.683	0.3312	1.04	. Q	. V	.	.	.
15.700	0.3327	1.08	. Q	. V	.	.	.
15.717	0.3342	1.11	. Q	. V	.	.	.
15.733	0.3358	1.15	. Q	. V	.	.	.
15.750	0.3375	1.19	. Q	. V	.	.	.
15.767	0.3392	1.22	. Q	. V	.	.	.
15.783	0.3409	1.26	. Q	. V	.	.	.
15.800	0.3427	1.30	. Q	. V	.	.	.
15.817	0.3445	1.34	. Q	. V	.	.	.
15.833	0.3464	1.38	. Q	. V	.	.	.
15.850	0.3484	1.42	. Q	. V	.	.	.
15.867	0.3504	1.47	. Q	. V	.	.	.
15.883	0.3525	1.52	. Q	. V	.	.	.

15.900	0.3546	1.56	.	Q	.	V	.	.
15.917	0.3568	1.61	.	.Q	.	V	.	.
15.933	0.3591	1.65	.	.Q	.	V	.	.
15.950	0.3615	1.70	.	.Q	.	V	.	.
15.967	0.3639	1.75	.	.Q	.	V	.	.
15.983	0.3663	1.79	.	.Q	.	V	.	.
16.000	0.3689	1.84	.	.Q	.	V	.	.
16.017	0.3717	2.04	.	.Q	.	V	.	.
16.033	0.3750	2.39	.	.	Q	.	V	.
16.050	0.3788	2.75	.	.	.	Q	V	.
16.067	0.3830	3.10	.	.	.	.Q	V	.
16.083	0.3878	3.45	.	.	.	.	Q	.
16.100	0.3930	3.81	.	.	.	.	V	Q
16.117	0.3988	4.16	.	.	.	.	V	Q.
16.133	0.4050	4.52	.	.	.	.	V	.Q
16.150	0.4117	4.87	.	.	.	.	V	.Q
16.167	0.4189	5.22	.	.	.	.	V	.Q
16.183	0.4268	5.71	.	.	.	.	V	.Q
16.200	0.4343	5.45	.	.	.	.	V	.Q
16.217	0.4412	5.03	.	.	.	.	V	.Q
16.233	0.4475	4.60	.	.	.	.	V	.Q
16.250	0.4533	4.18	.	.	.	.	V	Q.
16.267	0.4585	3.76	.	.	.	.	Q	V
16.283	0.4631	3.34	.	.	.	.	Q	V
16.300	0.4671	2.91	.	.	.	.	Q	V
16.317	0.4705	2.49	.	.	.	.	Q	V
16.333	0.4734	2.07	.	.	.	.	Q	V
16.350	0.4756	1.65	.	.	.	.	.Q	V
16.367	0.4773	1.24	.	.	.	.	Q	V
16.383	0.4788	1.10	.	.	.	.	Q	V
16.400	0.4803	1.08	.	.	.	.	Q	V
16.417	0.4818	1.05	.	.	.	.	Q	V
16.433	0.4832	1.03	.	.	.	.	Q	V
16.450	0.4846	1.01	.	.	.	.	Q	V
16.467	0.4859	0.99	.	.	.	.	Q	V
16.483	0.4873	0.97	.	.	.	.	Q	V
16.500	0.4886	0.94	.	.	.	.	Q	V
16.517	0.4899	0.92	.	.	.	.	Q	V
16.533	0.4911	0.90	.	.	.	.	Q	V
16.550	0.4923	0.88	.	.	.	.	Q	V
16.567	0.4935	0.86	.	.	.	.	Q	V
16.583	0.4947	0.85	.	.	.	.	Q	V
16.600	0.4958	0.83	.	.	.	.	Q	V
16.617	0.4969	0.82	.	.	.	.	Q	V
16.633	0.4980	0.80	.	.	.	.	Q	V
16.650	0.4991	0.79	.	.	.	.	Q	V
16.667	0.5002	0.77	.	.	.	.	Q	V
16.683	0.5012	0.76	.	.	.	.	Q	V
16.700	0.5022	0.74	.	.	.	.	Q	V
16.717	0.5032	0.73	.	.	.	.	Q	V
16.733	0.5042	0.71	.	.	.	.	Q	V
16.750	0.5052	0.70	.	.	.	.	Q	V
16.767	0.5061	0.69	.	.	.	.	Q	V
16.783	0.5071	0.68	.	.	.	.	Q	V
16.800	0.5080	0.67	.	.	.	.	Q	V
16.817	0.5089	0.66	.	.	.	.	Q	V
16.833	0.5098	0.65	.	.	.	.	Q	V
16.850	0.5107	0.65	.	.	.	.	Q	V
16.867	0.5116	0.64	.	.	.	.	Q	V
16.883	0.5124	0.63	.	.	.	.	Q	V
16.900	0.5133	0.62	.	.	.	.	Q	V
16.917	0.5141	0.61	.	.	.	.	Q	V
16.933	0.5150	0.60	.	.	.	.	Q	V
16.950	0.5158	0.60	.	.	.	.	Q	V

16.967	0.5166	0.59	.	Q	.	.	.	V	.
16.983	0.5174	0.58	.	Q	.	.	.	V	.
17.000	0.5182	0.58	.	Q	.	.	.	V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	765.0
20%	195.0
30%	115.0
40%	90.0
50%	75.0
60%	60.0
70%	45.0
80%	30.0
90%	15.0

 FLOW PROCESS FROM NODE 228.00 TO NODE 228.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

 STREAM HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	7.5	15.0	22.5	30.0
15.800	1.2901	4.99	.	Q	.	V	.
15.817	1.2972	5.19	.	Q	.	V	.
15.833	1.3047	5.38	.	Q	.	V	.
15.850	1.3124	5.59	.	Q	.	V	.
15.867	1.3203	5.80	.	Q	.	V	.
15.883	1.3287	6.03	.	Q	.	V	.
15.900	1.3373	6.28	.	Q	.	V	.
15.917	1.3463	6.53	.	Q	.	V	.
15.933	1.3556	6.77	.	Q	.	V	.
15.950	1.3653	7.02	.	Q	.	V	.
15.967	1.3753	7.26	.	Q	.	V	.
15.983	1.3856	7.51	.	Q	.	V	.
16.000	1.3963	7.75	.	Q	.	V	.
16.017	1.4084	8.77	.	.Q	.	V	.
16.033	1.4230	10.60	.	.	Q	V	.
16.050	1.4402	12.47	.	.	.	Q	V
16.067	1.4599	14.33	.	.	.	Q	V
16.083	1.4822	16.19	.	.	.	.Q	V
16.100	1.5071	18.06	.	.	.	.	Q
16.117	1.5345	19.92	.	.	.	.	V
16.133	1.5645	21.79	.	.	.	.	V
16.150	1.5971	23.61	.	.	.	.	V
16.167	1.6277	22.25	.	.	.	.	V
16.183	1.6565	20.94	.	.	.	.	Q
16.200	1.6825	18.87	.	.	.	.	Q
16.217	1.7055	16.65	.	.	.	.	Q
16.233	1.7253	14.42	.	.	.	.	Q
16.250	1.7421	12.19	.	.	.	.	Q

16.267	1.7559	9.97	.	.	Q	.	V.	.
16.283	1.7665	7.76	.	.	Q	.	V.	.
16.300	1.7754	6.41	.	.	Q	.	V.	.
16.317	1.7834	5.81	.	.	Q	.	V.	.
16.333	1.7906	5.25	.	.	Q	.	V.	.
16.350	1.7971	4.69	.	.	Q	.	V.	.
16.367	1.8028	4.15	.	.	Q	.	V.	.
16.383	1.8081	3.88	.	.	Q	.	V.	.
16.400	1.8133	3.72	.	.	Q	.	V.	.
16.417	1.8182	3.57	.	.	Q	.	V	.
16.433	1.8229	3.43	.	.	Q	.	V	.
16.450	1.8275	3.37	.	.	Q	.	V	.
16.467	1.8321	3.32	.	.	Q	.	V	.
16.483	1.8366	3.28	.	.	Q	.	V	.
16.500	1.8411	3.23	.	.	Q	.	V	.
16.517	1.8455	3.19	.	.	Q	.	V	.
16.533	1.8498	3.14	.	.	Q	.	V	.
16.550	1.8541	3.10	.	.	Q	.	V	.
16.567	1.8583	3.06	.	.	Q	.	V	.
16.583	1.8624	3.01	.	.	Q	.	V	.
16.600	1.8665	2.96	.	.	Q	.	V	.
16.617	1.8705	2.91	.	.	Q	.	V	.
16.633	1.8745	2.86	.	.	Q	.	V	.
16.650	1.8783	2.81	.	.	Q	.	.V	.
16.667	1.8822	2.76	.	.	Q	.	.V	.
16.683	1.8859	2.71	.	.	Q	.	.V	.
16.700	1.8896	2.66	.	.	Q	.	.V	.
16.717	1.8932	2.61	.	.	Q	.	.V	.
16.733	1.8967	2.57	.	.	Q	.	.V	.
16.750	1.9002	2.54	.	.	Q	.	.V	.
16.767	1.9036	2.51	.	.	Q	.	.V	.
16.783	1.9071	2.47	.	.	Q	.	.V	.
16.800	1.9104	2.44	.	.	Q	.	.V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1009.0
10%	635.0
20%	170.0
30%	100.0
40%	75.0
50%	65.0
60%	55.0
70%	40.0
80%	25.0
90%	15.0

END OF FLOODSCx ROUTING ANALYSIS

F L O O D R O U T I N G A N A L Y S I S
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
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 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

* THE VILLAGE - TTM 17439 *
 * 25-YR PROPOSED CONDITION - LINE N CALIB FD *
 * MCHANDOO *

FILE NAME: PROP25N.DAT

TIME/DATE OF STUDY: 16:38 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J
 of the Hydrology Manual provides estimates of runoff
 hydrograph and runoff volume for watersheds whose time of
 concentration is less than 25 minutes. The PROGRAM User
 should check the applicability of using the small area unit
 hydrograph procedures, and follow the guidelines in
 Sections J and K.5 in complex watershed modeling.

FLOW PROCESS FROM NODE 202.00 TO NODE 207.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

=====

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 4.30

SOIL-LOSS RATE, Fm, (INCH/HR) = 0.068

LOW LOSS FRACTION = 0.213

TIME OF CONCENTRATION(MIN.) = 8.65

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

USER SPECIFIED RAINFALL VALUES ARE USED:

RETURN FREQUENCY(YEARS) = 25

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.43

30-MINUTE POINT RAINFALL VALUE(INCHES) = 0.94

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.24

3-HOUR POINT RAINFALL VALUE(INCHES) = 2.09

6-HOUR POINT RAINFALL VALUE(INCHES) = 2.91

24-HOUR POINT RAINFALL VALUE(INCHES) = 4.83

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.29

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.44

=====

2 4 - H O U R S T O R M
 R U N O F F H Y D R O G R A P H

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)

(Notes: Time indicated is at END of Each Unit Intervals.

Peak 5-minute rainfall intensity is modeled as

a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	3.6	7.2	10.8	14.4
14.000	0.4514	0.99	. Q	. V	.	.	.
14.017	0.4527	0.99	. Q	. V	.	.	.
14.033	0.4541	1.00	. Q	. V	.	.	.
14.050	0.4555	1.00	. Q	. V	.	.	.
14.067	0.4569	1.01	. Q	. V	.	.	.
14.083	0.4583	1.01	. Q	. V	.	.	.
14.100	0.4597	1.02	. Q	. V	.	.	.
14.117	0.4611	1.03	. Q	. V	.	.	.
14.133	0.4625	1.03	. Q	. V	.	.	.
14.150	0.4639	1.04	. Q	. V	.	.	.
14.167	0.4654	1.04	. Q	. V	.	.	.
14.183	0.4668	1.04	. Q	. V	.	.	.
14.200	0.4682	1.05	. Q	. V	.	.	.
14.217	0.4697	1.05	. Q	. V	.	.	.
14.233	0.4711	1.05	. Q	. V	.	.	.
14.250	0.4726	1.06	. Q	. V	.	.	.
14.267	0.4741	1.06	. Q	. V	.	.	.
14.283	0.4755	1.07	. Q	. V	.	.	.
14.300	0.4770	1.07	. Q	. V	.	.	.
14.317	0.4785	1.08	. Q	. V	.	.	.
14.333	0.4800	1.09	. Q	. V	.	.	.
14.350	0.4815	1.10	. Q	. V	.	.	.
14.367	0.4831	1.11	. Q	. V	.	.	.
14.383	0.4846	1.12	. Q	. V	.	.	.
14.400	0.4862	1.13	. Q	. V	.	.	.
14.417	0.4877	1.14	. Q	. V	.	.	.
14.433	0.4893	1.14	. Q	. V	.	.	.
14.450	0.4909	1.15	. Q	. V	.	.	.
14.467	0.4925	1.15	. Q	. V	.	.	.
14.483	0.4941	1.16	. Q	. V	.	.	.
14.500	0.4957	1.16	. Q	. V	.	.	.
14.517	0.4973	1.17	. Q	. V	.	.	.
14.533	0.4989	1.17	. Q	. V	.	.	.
14.550	0.5005	1.18	. Q	. V	.	.	.
14.567	0.5022	1.19	. Q	. V	.	.	.
14.583	0.5038	1.20	. Q	. V	.	.	.
14.600	0.5055	1.21	. Q	. V	.	.	.
14.617	0.5071	1.22	. Q	. V	.	.	.
14.633	0.5088	1.23	. Q	. V	.	.	.
14.650	0.5106	1.24	. Q	. V	.	.	.
14.667	0.5123	1.25	. Q	. V	.	.	.
14.683	0.5140	1.27	. Q	. V	.	.	.
14.700	0.5158	1.28	. Q	. V	.	.	.
14.717	0.5176	1.29	. Q	. V	.	.	.
14.733	0.5193	1.30	. Q	. V	.	.	.
14.750	0.5211	1.30	. Q	. V	.	.	.
14.767	0.5229	1.31	. Q	. V	.	.	.
14.783	0.5248	1.32	. Q	. V	.	.	.
14.800	0.5266	1.32	. Q	. V	.	.	.
14.817	0.5284	1.33	. Q	. V	.	.	.

14.833	0.5302	1.34	.	Q	.	V	.	.	.
14.850	0.5321	1.34	.	Q	.	V	.	.	.
14.867	0.5340	1.36	.	Q	.	V	.	.	.
14.883	0.5359	1.37	.	Q	.	V	.	.	.
14.900	0.5378	1.39	.	Q	.	V	.	.	.
14.917	0.5397	1.41	.	Q	.	V	.	.	.
14.933	0.5417	1.42	.	Q	.	V	.	.	.
14.950	0.5436	1.44	.	Q	.	V	.	.	.
14.967	0.5456	1.45	.	Q	.	V	.	.	.
14.983	0.5477	1.47	.	Q	.	V	.	.	.
15.000	0.5497	1.49	.	Q	.	V	.	.	.
15.017	0.5518	1.50	.	Q	.	V	.	.	.
15.033	0.5539	1.51	.	Q	.	V	.	.	.
15.050	0.5559	1.52	.	Q	.	V	.	.	.
15.067	0.5580	1.53	.	Q	.	V	.	.	.
15.083	0.5602	1.54	.	Q	.	V	.	.	.
15.100	0.5623	1.55	.	Q	.	V	.	.	.
15.117	0.5644	1.56	.	Q	.	V	.	.	.
15.133	0.5666	1.57	.	Q	.	V	.	.	.
15.150	0.5688	1.58	.	Q	.	V	.	.	.
15.167	0.5710	1.61	.	Q	.	V	.	.	.
15.183	0.5732	1.63	.	Q	.	V	.	.	.
15.200	0.5755	1.66	.	Q	.	V	.	.	.
15.217	0.5778	1.68	.	Q	.	V	.	.	.
15.233	0.5802	1.71	.	Q	.	V	.	.	.
15.250	0.5826	1.73	.	Q	.	V	.	.	.
15.267	0.5850	1.76	.	Q	.	V	.	.	.
15.283	0.5874	1.78	.	Q	.	V	.	.	.
15.300	0.5899	1.80	.	Q	.	V	.	.	.
15.317	0.5924	1.81	.	Q	.	V	.	.	.
15.333	0.5949	1.83	.	Q	.	V	.	.	.
15.350	0.5975	1.85	.	Q	.	V	.	.	.
15.367	0.6000	1.86	.	Q	.	V	.	.	.
15.383	0.6026	1.88	.	Q	.	V	.	.	.
15.400	0.6052	1.89	.	Q	.	V	.	.	.
15.417	0.6079	1.91	.	Q	.	V	.	.	.
15.433	0.6105	1.92	.	Q	.	V	.	.	.
15.450	0.6132	1.93	.	Q	.	V	.	.	.
15.467	0.6158	1.93	.	Q	.	V	.	.	.
15.483	0.6185	1.94	.	Q	.	V	.	.	.
15.500	0.6212	1.94	.	Q	.	V	.	.	.
15.517	0.6238	1.94	.	Q	.	V	.	.	.
15.533	0.6265	1.94	.	Q	.	V	.	.	.
15.550	0.6292	1.95	.	Q	.	V	.	.	.
15.567	0.6319	1.95	.	Q	.	V	.	.	.
15.583	0.6346	1.97	.	Q	.	V	.	.	.
15.600	0.6374	2.00	.	Q	.	V	.	.	.
15.617	0.6402	2.03	.	Q	.	V	.	.	.
15.633	0.6430	2.07	.	Q	.	V	.	.	.
15.650	0.6459	2.10	.	Q	.	V	.	.	.
15.667	0.6488	2.13	.	Q	.	V	.	.	.
15.683	0.6518	2.16	.	Q	.	V	.	.	.
15.700	0.6548	2.20	.	Q	.	V	.	.	.
15.717	0.6579	2.23	.	Q	.	V	.	.	.
15.733	0.6612	2.36	.	Q	.	V	.	.	.
15.750	0.6646	2.51	.	Q	.	V	.	.	.
15.767	0.6683	2.66	.	Q	.	V	.	.	.
15.783	0.6721	2.81	.	Q	.	V	.	.	.
15.800	0.6762	2.96	.	Q	.	V	.	.	.
15.817	0.6805	3.11	.	Q	.	V	.	.	.
15.833	0.6850	3.26	.	Q	.	V	.	.	.
15.850	0.6897	3.41	.	Q	.	V	.	.	.
15.867	0.6946	3.56	.	Q	.	V	.	.	.
15.883	0.6997	3.71	.	Q	.	V	.	.	.

15.900	0.7050	3.87	.	Q	.	V	.	.	.
15.917	0.7106	4.02	.	Q	.	V	.	.	.
15.933	0.7163	4.18	.	Q	.	V	.	.	.
15.950	0.7223	4.33	.	Q	.	V	.	.	.
15.967	0.7284	4.48	.	Q	.	V	.	.	.
15.983	0.7348	4.64	.	Q	.	V	.	.	.
16.000	0.7414	4.79	.	Q	.	V	.	.	.
16.017	0.7489	5.42	.	Q	.	V	.	.	.
16.033	0.7579	6.52	.	Q	.	V	.	.	.
16.050	0.7684	7.62	.	Q	.	V	.	.	.
16.067	0.7804	8.72	.	Q	.	V	.	.	.
16.083	0.7939	9.81	.	Q	.	V	.	.	.
16.100	0.8089	10.91	.	Q	.	V	.	.	.
16.117	0.8255	12.01	.	Q	.	V	.	.	.
16.133	0.8435	13.11	.	Q	.	V	.	.	.
16.150	0.8633	14.38	.	Q	.	V	.	.	.
16.167	0.8815	13.23	.	Q	.	V	.	.	.
16.183	0.8979	11.89	.	Q	.	V	.	.	.
16.200	0.9124	10.55	.	Q	.	V	.	.	.
16.217	0.9251	9.20	.	Q	.	V	.	.	.
16.233	0.9359	7.86	.	Q	.	V	.	.	.
16.250	0.9449	6.51	.	Q	.	V	.	.	.
16.267	0.9520	5.17	.	Q	.	V	.	.	.
16.283	0.9573	3.83	.	Q	.	V	.	.	.
16.300	0.9611	2.78	.	Q	.	V	.	.	.
16.317	0.9647	2.61	.	Q	.	V	.	.	.
16.333	0.9682	2.50	.	Q	.	V	.	.	.
16.350	0.9715	2.39	.	Q	.	V	.	.	.
16.367	0.9746	2.27	.	Q	.	V	.	.	.
16.383	0.9776	2.16	.	Q	.	V	.	.	.
16.400	0.9804	2.04	.	Q	.	V	.	.	.
16.417	0.9830	1.93	.	Q	.	V	.	.	.
16.433	0.9855	1.81	.	Q	.	V	.	.	.
16.450	0.9880	1.76	.	Q	.	V	.	.	.
16.467	0.9904	1.75	.	Q	.	V	.	.	.
16.483	0.9928	1.74	.	Q	.	V	.	.	.
16.500	0.9951	1.73	.	Q	.	V	.	.	.
16.517	0.9975	1.71	.	Q	.	V	.	.	.
16.533	0.9998	1.70	.	Q	.	V	.	.	.
16.550	1.0022	1.69	.	Q	.	V	.	.	.
16.567	1.0045	1.68	.	Q	.	V	.	.	.
16.583	1.0068	1.67	.	Q	.	V	.	.	.
16.600	1.0091	1.64	.	Q	.	V	.	.	.
16.617	1.0113	1.61	.	Q	.	V	.	.	.
16.633	1.0135	1.58	.	Q	.	V	.	.	.
16.650	1.0156	1.55	.	Q	.	V	.	.	.
16.667	1.0177	1.52	.	Q	.	V	.	.	.
16.683	1.0197	1.49	.	Q	.	V	.	.	.
16.700	1.0218	1.46	.	Q	.	V	.	.	.
16.717	1.0237	1.43	.	Q	.	V	.	.	.
16.733	1.0257	1.41	.	Q	.	V	.	.	.
16.750	1.0276	1.39	.	Q	.	V	.	.	.
16.767	1.0295	1.36	.	Q	.	V	.	.	.
16.783	1.0313	1.34	.	Q	.	V	.	.	.
16.800	1.0331	1.32	.	Q	.	V	.	.	.
16.817	1.0349	1.30	.	Q	.	V	.	.	.
16.833	1.0367	1.28	.	Q	.	V	.	.	.
16.850	1.0384	1.26	.	Q	.	V	.	.	.
16.867	1.0401	1.24	.	Q	.	V	.	.	.
16.883	1.0418	1.22	.	Q	.	V	.	.	.
16.900	1.0435	1.21	.	Q	.	V	.	.	.
16.917	1.0451	1.19	.	Q	.	V	.	.	.
16.933	1.0468	1.18	.	Q	.	V	.	.	.
16.950	1.0484	1.16	.	Q	.	V	.	.	.

16.967	1.0499	1.15	. Q	.	.	. V	.
16.983	1.0515	1.13	. Q	.	.	. V	.
17.000	1.0530	1.12	. Q	.	.	. V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	530.0
20%	150.0
30%	100.0
40%	70.0
50%	60.0
60%	50.0
70%	35.0
80%	25.0
90%	15.0

 FLOW PROCESS FROM NODE 207.00 TO NODE 208.00 IS CODE = 4

 >>>>MODEL PIPEFLOW ROUTING OF STREAM #1<<<<<<

MODEL PIPEFLOW ROUTING OF STREAM 1 WHERE
 STORAGE EFFECTS ARE NEGLECTED WITHIN THE PIPE, FLOW
 VELOCITIES ARE ESTIMATED BY ASSUMING STEADY FLOW FOR
 EACH UNIT INTERVAL(NORMAL DEPTH, Dn), AND FLOWS IN EXCESS
 OF (.82)(DIAMETER) ARE PONDED AT THE UPSTREAM INLET:
 UNIT INTERVAL FLOW VELOCITY COMPUTED USING Dn UP TO
 (0.938)(DIAMETER):

PIPELENGTH(FT) = 75.00 MANNINGS FACTOR = 0.013
 UPSTREAM ELEVATION(FT) = 769.00
 DOWNSTREAM ELEVATION(FT) = 760.00
 PIPE DIAMETER(FT) = 1.50

NORMAL DEPTH VELOCITY PIPE ROUTING RESULTS:

TIME (HRS)	INFLOW (CFS)	VELOCITY (FPS)	OUTFLOW (CFS)	UPSTREAM PONDING(AF)
15.000	1.49	8.74	1.49	0.000
15.017	1.50	8.81	1.50	0.000
15.033	1.51	8.86	1.51	0.000
15.050	1.52	8.92	1.52	0.000
15.067	1.53	8.98	1.53	0.000
15.083	1.54	9.04	1.54	0.000
15.100	1.55	9.10	1.55	0.000
15.117	1.56	9.16	1.56	0.000
15.133	1.57	9.21	1.57	0.000
15.150	1.58	9.31	1.58	0.000
15.167	1.61	9.45	1.61	0.000
15.183	1.63	9.60	1.63	0.000
15.200	1.66	9.75	1.66	0.000
15.217	1.68	9.89	1.68	0.000

15.233	1.71	10.04	1.71	0.000
15.250	1.73	10.18	1.73	0.000
15.267	1.76	10.33	1.76	0.000
15.283	1.78	10.48	1.78	0.000
15.300	1.80	10.58	1.80	0.000
15.317	1.81	10.68	1.81	0.000
15.333	1.83	10.72	1.83	0.000
15.350	1.85	10.74	1.85	0.000
15.367	1.86	10.76	1.86	0.000
15.383	1.88	10.78	1.88	0.000
15.400	1.89	10.80	1.89	0.000
15.417	1.91	10.82	1.91	0.000
15.433	1.92	10.84	1.92	0.000
15.450	1.93	10.84	1.93	0.000
15.467	1.93	10.85	1.93	0.000
15.483	1.94	10.85	1.93	0.000
15.500	1.94	10.86	1.94	0.000
15.517	1.94	10.86	1.94	0.000
15.533	1.94	10.86	1.94	0.000
15.550	1.95	10.87	1.95	0.000
15.567	1.95	10.87	1.95	0.000
15.583	1.97	10.89	1.97	0.000
15.600	2.00	10.93	2.00	0.000
15.617	2.03	10.97	2.03	0.000
15.633	2.07	11.01	2.06	0.000
15.650	2.10	11.05	2.10	0.000
15.667	2.13	11.10	2.13	0.000
15.683	2.16	11.14	2.16	0.000
15.700	2.20	11.18	2.19	0.000
15.717	2.23	11.22	2.23	0.000
15.733	2.36	11.38	2.35	0.000
15.750	2.51	11.56	2.49	0.000
15.767	2.66	11.75	2.65	0.000
15.783	2.81	11.94	2.80	0.000
15.800	2.96	12.12	2.95	0.000
15.817	3.11	12.31	3.10	0.000
15.833	3.26	12.50	3.25	0.000
15.850	3.41	12.69	3.40	0.000
15.867	3.56	12.87	3.55	0.000
15.883	3.71	13.04	3.70	0.000
15.900	3.87	13.19	3.86	0.000
15.917	4.02	13.34	4.01	0.000
15.933	4.18	13.49	4.17	0.000
15.950	4.33	13.64	4.32	0.000
15.967	4.48	13.78	4.47	0.000
15.983	4.64	13.93	4.63	0.000
16.000	4.79	14.08	4.78	0.000
16.017	5.42	14.68	5.38	0.000
16.033	6.52	15.50	6.45	0.000
16.050	7.62	16.26	7.56	0.000
16.067	8.72	16.91	8.66	0.000
16.083	9.81	17.52	9.76	0.000
16.100	10.91	18.12	10.86	0.000
16.117	12.01	18.52	11.95	0.000
16.133	13.11	18.92	13.06	0.000
16.150	14.38	19.39	14.32	0.000
16.167	13.23	18.97	13.29	0.000
16.183	11.89	18.47	11.96	0.000
16.200	10.55	17.92	10.61	0.000
16.217	9.20	17.19	9.27	0.000
16.233	7.86	16.40	7.93	0.000
16.250	6.51	15.50	6.59	0.000
16.267	5.17	14.45	5.25	0.000
16.283	3.83	13.15	3.91	0.000

16.300	2.78	11.91	2.85	0.000
16.317	2.61	11.70	2.63	0.000
16.333	2.50	11.55	2.51	0.000
16.350	2.39	11.41	2.39	0.000
16.367	2.27	11.27	2.28	0.000
16.383	2.16	11.13	2.17	0.000
16.400	2.04	10.99	2.05	0.000
16.417	1.93	10.84	1.94	0.000
16.433	1.81	10.68	1.82	0.000
16.450	1.76	10.34	1.76	0.000
16.467	1.75	10.28	1.75	0.000
16.483	1.74	10.22	1.74	0.000
16.500	1.73	10.15	1.73	0.000
16.517	1.71	10.09	1.71	0.000
16.533	1.70	10.03	1.70	0.000
16.550	1.69	9.96	1.69	0.000
16.567	1.68	9.90	1.68	0.000
16.583	1.67	9.83	1.67	0.000
16.600	1.64	9.67	1.64	0.000
16.617	1.61	9.50	1.61	0.000
16.633	1.58	9.32	1.58	0.000
16.650	1.55	9.14	1.55	0.000
16.667	1.52	8.97	1.52	0.000
16.683	1.49	8.79	1.49	0.000
16.700	1.46	8.61	1.46	0.000
16.717	1.43	8.44	1.43	0.000
16.733	1.41	8.28	1.41	0.000
16.750	1.39	8.15	1.39	0.000
16.767	1.36	8.03	1.36	0.000
16.783	1.34	7.91	1.34	0.000
16.800	1.32	7.79	1.32	0.000
16.817	1.30	7.67	1.30	0.000
16.833	1.28	7.55	1.28	0.000
16.850	1.26	7.43	1.26	0.000
16.867	1.24	7.30	1.24	0.000
16.883	1.22	7.20	1.22	0.000
16.900	1.21	7.11	1.21	0.000
16.917	1.19	7.02	1.19	0.000
16.933	1.18	6.93	1.18	0.000
16.950	1.16	6.84	1.16	0.000
16.967	1.15	6.75	1.15	0.000
16.983	1.13	6.66	1.13	0.000
17.000	1.12	6.57	1.12	0.000
17.017	1.10	6.48	1.10	0.000
17.033	1.09	6.42	1.09	0.000
17.050	1.08	6.36	1.08	0.000
17.067	1.07	6.30	1.07	0.000
17.083	1.06	6.24	1.06	0.000
17.100	1.05	6.18	1.05	0.000
17.117	1.04	6.12	1.04	0.000
17.133	1.03	6.06	1.03	0.000
17.150	1.02	6.00	1.02	0.000
17.167	1.01	5.94	1.01	0.000
17.183	1.00	5.89	1.00	0.000
17.200	0.99	5.84	0.99	0.000
17.217	0.98	5.79	0.98	0.000
17.233	0.97	5.74	0.97	0.000
17.250	0.97	5.69	0.97	0.000
17.267	0.96	5.64	0.96	0.000
17.283	0.95	5.59	0.95	0.000
17.300	0.94	5.54	0.94	0.000
17.317	0.93	5.49	0.93	0.000
17.333	0.93	5.46	0.93	0.000
17.350	0.92	5.42	0.92	0.000

17.367	0.91	5.38	0.91	0.000
17.383	0.91	5.35	0.91	0.000
17.400	0.90	5.31	0.90	0.000
17.417	0.90	5.27	0.90	0.000
17.433	0.89	5.23	0.89	0.000
17.450	0.88	5.20	0.88	0.000
17.467	0.88	5.17	0.88	0.000
17.483	0.87	5.13	0.87	0.000
17.500	0.87	5.10	0.87	0.000
17.517	0.86	5.07	0.86	0.000
17.533	0.86	5.04	0.86	0.000
17.550	0.85	5.01	0.85	0.000
17.567	0.85	4.98	0.85	0.000
17.583	0.84	4.95	0.84	0.000
17.600	0.84	4.92	0.84	0.000
17.617	0.83	4.89	0.83	0.000
17.633	0.83	4.86	0.83	0.000
17.650	0.82	4.83	0.82	0.000
17.667	0.82	4.81	0.82	0.000
17.683	0.81	4.78	0.81	0.000
17.700	0.81	4.75	0.81	0.000
17.717	0.80	4.73	0.80	0.000
17.733	0.80	4.70	0.80	0.000
17.750	0.79	4.68	0.79	0.000
17.767	0.79	4.65	0.79	0.000
17.783	0.79	4.63	0.79	0.000
17.800	0.78	4.60	0.78	0.000
17.817	0.78	4.58	0.78	0.000
17.833	0.77	4.56	0.77	0.000
17.850	0.77	4.53	0.77	0.000
17.867	0.77	4.51	0.77	0.000
17.883	0.76	4.49	0.76	0.000
17.900	0.76	4.47	0.76	0.000
17.917	0.76	4.44	0.76	0.000
17.933	0.75	4.42	0.75	0.000
17.950	0.75	4.40	0.75	0.000
17.967	0.74	4.38	0.74	0.000
17.983	0.74	4.36	0.74	0.000
18.000	0.74	4.34	0.74	0.000
18.017	0.73	4.32	0.73	0.000
18.033	0.72	4.25	0.72	0.000
18.050	0.70	4.12	0.70	0.000
18.067	0.68	3.98	0.68	0.000
18.083	0.65	3.84	0.65	0.000
18.100	0.63	3.71	0.63	0.000
18.117	0.61	3.57	0.61	0.000
18.133	0.58	3.44	0.58	0.000
18.150	0.56	3.30	0.56	0.000
18.167	0.54	3.17	0.54	0.000
18.183	0.53	3.12	0.53	0.000
18.200	0.53	3.10	0.53	0.000
18.217	0.52	3.09	0.52	0.000
18.233	0.52	3.07	0.52	0.000
18.250	0.52	3.06	0.52	0.000
18.267	0.52	3.04	0.52	0.000
18.283	0.51	3.02	0.51	0.000
18.300	0.51	3.01	0.51	0.000
18.317	0.51	2.99	0.51	0.000
18.333	0.51	2.98	0.51	0.000
18.350	0.50	2.97	0.50	0.000
18.367	0.50	2.95	0.50	0.000
18.383	0.50	2.94	0.50	0.000
18.400	0.50	2.93	0.50	0.000
18.417	0.49	2.91	0.49	0.000

18.433	0.49	2.90	0.49	0.000
18.450	0.49	2.88	0.49	0.000
18.467	0.49	2.87	0.49	0.000
18.483	0.49	2.86	0.49	0.000
18.500	0.48	2.85	0.48	0.000
18.517	0.48	2.83	0.48	0.000
18.533	0.48	2.82	0.48	0.000
18.550	0.48	2.81	0.48	0.000
18.567	0.48	2.80	0.48	0.000
18.583	0.47	2.78	0.47	0.000
18.600	0.47	2.77	0.47	0.000
18.617	0.47	2.76	0.47	0.000
18.633	0.47	2.75	0.47	0.000
18.650	0.47	2.74	0.47	0.000
18.667	0.46	2.73	0.46	0.000
18.683	0.46	2.71	0.46	0.000
18.700	0.46	2.70	0.46	0.000
18.717	0.46	2.69	0.46	0.000
18.733	0.46	2.68	0.46	0.000
18.750	0.45	2.67	0.45	0.000
18.767	0.45	2.66	0.45	0.000
18.783	0.45	2.65	0.45	0.000
18.800	0.45	2.64	0.45	0.000
18.817	0.45	2.63	0.45	0.000
18.833	0.44	2.62	0.44	0.000
18.850	0.44	2.61	0.44	0.000
18.867	0.44	2.60	0.44	0.000
18.883	0.44	2.59	0.44	0.000
18.900	0.44	2.58	0.44	0.000
18.917	0.44	2.57	0.44	0.000
18.933	0.43	2.56	0.43	0.000
18.950	0.43	2.55	0.43	0.000
18.967	0.43	2.54	0.43	0.000
18.983	0.43	2.53	0.43	0.000
19.000	0.43	2.52	0.43	0.000

FLOW PROCESS FROM NODE 208.00 TO NODE 208.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90

TOTAL CATCHMENT AREA(ACRES) = 1.50

SOIL-LOSS RATE, Fm, (INCH/HR) = 0.022

LOW LOSS FRACTION = 0.106

TIME OF CONCENTRATION(MIN.) = 11.05

SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA

USER SPECIFIED RAINFALL VALUES ARE USED:

RETURN FREQUENCY(YEARS) = 25

5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.43

30-MINUTE POINT RAINFALL VALUE(INCHES) = 0.94

1-HOUR POINT RAINFALL VALUE(INCHES) = 1.24

3-HOUR POINT RAINFALL VALUE(INCHES) = 2.09

6-HOUR POINT RAINFALL VALUE(INCHES) = 2.91

24-HOUR POINT RAINFALL VALUE(INCHES) = 4.83

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 0.50

TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.10

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2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

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HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)

(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	1.1	2.2	3.3	4.4
14.000	0.1794	0.41	. Q	. V	.	.	.
14.017	0.1799	0.41	. Q	. V	.	.	.
14.033	0.1805	0.41	. Q	. V	.	.	.
14.050	0.1811	0.41	. Q	. V	.	.	.
14.067	0.1816	0.41	. Q	. V	.	.	.
14.083	0.1822	0.41	. Q	. V	.	.	.
14.100	0.1828	0.41	. Q	. V	.	.	.
14.117	0.1834	0.41	. Q	. V	.	.	.
14.133	0.1839	0.42	. Q	. V	.	.	.
14.150	0.1845	0.42	. Q	. V	.	.	.
14.167	0.1851	0.42	. Q	. V	.	.	.
14.183	0.1857	0.42	. Q	. V	.	.	.
14.200	0.1862	0.42	. Q	. V	.	.	.
14.217	0.1868	0.43	. Q	. V	.	.	.
14.233	0.1874	0.43	. Q	. V	.	.	.
14.250	0.1880	0.43	. Q	. V	.	.	.
14.267	0.1886	0.43	. Q	. V	.	.	.
14.283	0.1892	0.44	. Q	. V	.	.	.
14.300	0.1898	0.44	. Q	. V	.	.	.
14.317	0.1904	0.44	. Q	. V	.	.	.
14.333	0.1910	0.44	. Q	. V	.	.	.
14.350	0.1916	0.45	. Q	. V	.	.	.
14.367	0.1923	0.45	. Q	. V	.	.	.
14.383	0.1929	0.45	. Q	. V	.	.	.
14.400	0.1935	0.45	. Q	. V	.	.	.
14.417	0.1941	0.45	. Q	. V	.	.	.
14.433	0.1947	0.45	. Q	. V	.	.	.
14.450	0.1954	0.46	. Q	. V	.	.	.
14.467	0.1960	0.46	. Q	. V	.	.	.
14.483	0.1966	0.46	. Q	. V	.	.	.
14.500	0.1973	0.46	. Q	. V	.	.	.
14.517	0.1979	0.46	. Q	. V	.	.	.
14.533	0.1985	0.46	. Q	. V	.	.	.
14.550	0.1992	0.47	. Q	. V	.	.	.
14.567	0.1998	0.47	. Q	. V	.	.	.
14.583	0.2005	0.48	. Q	. V	.	.	.
14.600	0.2011	0.48	. Q	. V	.	.	.
14.617	0.2018	0.48	. Q	. V	.	.	.
14.633	0.2025	0.49	. Q	. V	.	.	.
14.650	0.2032	0.49	. Q	. V	.	.	.
14.667	0.2038	0.49	. Q	. V	.	.	.
14.683	0.2045	0.50	. Q	. V	.	.	.
14.700	0.2052	0.50	. Q	. V	.	.	.
14.717	0.2059	0.51	. Q	. V	.	.	.
14.733	0.2066	0.51	. Q	. V	.	.	.
14.750	0.2073	0.51	. Q	. V	.	.	.
14.767	0.2080	0.51	. Q	. V	.	.	.
14.783	0.2087	0.52	. Q	. V	.	.	.
14.800	0.2095	0.52	. Q	. V	.	.	.
14.817	0.2102	0.52	. Q	. V	.	.	.

14.833	0.2109	0.52	. Q	. V	.	.	.
14.850	0.2116	0.53	. Q	. V	.	.	.
14.867	0.2123	0.53	. Q	. V	.	.	.
14.883	0.2131	0.53	. Q	. V	.	.	.
14.900	0.2138	0.53	. Q	. V	.	.	.
14.917	0.2145	0.54	. Q	. V	.	.	.
14.933	0.2153	0.54	. Q	. V	.	.	.
14.950	0.2161	0.55	. Q	. V	.	.	.
14.967	0.2168	0.56	. Q	. V	.	.	.
14.983	0.2176	0.56	. Q	. V	.	.	.
15.000	0.2184	0.57	. Q	. V	.	.	.
15.017	0.2192	0.57	. Q	. V	.	.	.
15.033	0.2200	0.58	. Q	. V	.	.	.
15.050	0.2208	0.59	. Q	. V	.	.	.
15.067	0.2216	0.59	. Q	. V	.	.	.
15.083	0.2224	0.60	. Q	. V	.	.	.
15.100	0.2232	0.60	. Q	. V	.	.	.
15.117	0.2241	0.61	. Q	. V	.	.	.
15.133	0.2249	0.61	. Q	. V	.	.	.
15.150	0.2258	0.61	. Q	. V	.	.	.
15.167	0.2266	0.62	. Q	. V	.	.	.
15.183	0.2275	0.62	. Q	. V	.	.	.
15.200	0.2283	0.63	. Q	. V	.	.	.
15.217	0.2292	0.63	. Q	. V	.	.	.
15.233	0.2301	0.63	. Q	. V	.	.	.
15.250	0.2309	0.64	. Q	. V	.	.	.
15.267	0.2318	0.64	. Q	. V	.	.	.
15.283	0.2327	0.65	. Q	. V	.	.	.
15.300	0.2336	0.65	. Q	. V	.	.	.
15.317	0.2345	0.66	. Q	. V	.	.	.
15.333	0.2354	0.66	. Q	. V	.	.	.
15.350	0.2364	0.67	. Q	. V	.	.	.
15.367	0.2373	0.68	. Q	. V	.	.	.
15.383	0.2382	0.68	. Q	. V	.	.	.
15.400	0.2392	0.69	. Q	. V	.	.	.
15.417	0.2401	0.69	. Q	. V	.	.	.
15.433	0.2411	0.70	. Q	. V	.	.	.
15.450	0.2421	0.71	. Q	. V	.	.	.
15.467	0.2430	0.71	. Q	. V	.	.	.
15.483	0.2440	0.71	. Q	. V	.	.	.
15.500	0.2450	0.71	. Q	. V	.	.	.
15.517	0.2460	0.71	. Q	. V	.	.	.
15.533	0.2470	0.71	. Q	. V	.	.	.
15.550	0.2480	0.72	. Q	. V	.	.	.
15.567	0.2489	0.72	. Q	. V	.	.	.
15.583	0.2499	0.72	. Q	. V	.	.	.
15.600	0.2509	0.72	. Q	. V	.	.	.
15.617	0.2519	0.72	. Q	. V	.	.	.
15.633	0.2529	0.72	. Q	. V	.	.	.
15.650	0.2539	0.74	. Q	. V	.	.	.
15.667	0.2550	0.78	. Q	. V	.	.	.
15.683	0.2561	0.81	. Q	. V	.	.	.
15.700	0.2573	0.85	. Q	. V	.	.	.
15.717	0.2585	0.88	. Q	. V	.	.	.
15.733	0.2598	0.92	. Q	. V	.	.	.
15.750	0.2611	0.95	. Q	. V	.	.	.
15.767	0.2624	0.98	. Q	. V	.	.	.
15.783	0.2638	1.02	. Q	.V	.	.	.
15.800	0.2653	1.05	. Q	.V	.	.	.
15.817	0.2668	1.09	. Q	.V	.	.	.
15.833	0.2683	1.12	. Q	.V	.	.	.
15.850	0.2699	1.16	. Q	.V	.	.	.
15.867	0.2716	1.20	. Q	.V	.	.	.
15.883	0.2733	1.24	. Q	.V	.	.	.

15.900	0.2750	1.28	.	.Q	.V	.	.
15.917	0.2769	1.32	.	.Q	.V	.	.
15.933	0.2787	1.35	.	.Q	.V	.	.
15.950	0.2806	1.39	.	.Q	.V	.	.
15.967	0.2826	1.43	.	.Q	.V	.	.
15.983	0.2846	1.47	.	.Q	.V	.	.
16.000	0.2867	1.51	.	.Q	.V	.	.
16.017	0.2890	1.66	.	.Q	.V	.	.
16.033	0.2917	1.92	.	.Q	.V	.	.
16.050	0.2947	2.18	.	.Q	.V	.	.
16.067	0.2980	2.44	.	.Q	.V	.	.
16.083	0.3017	2.70	.	.Q	.V	.	.
16.100	0.3058	2.97	.	.Q	.V	.	.
16.117	0.3103	3.23	.	.Q	.V	.	.
16.133	0.3151	3.49	.	.Q	.V	.	.
16.150	0.3202	3.75	.	.Q	.V	.	.
16.167	0.3258	4.01	.	.Q	.V	.	.
16.183	0.3318	4.42	.	.Q	.V	.	.
16.200	0.3377	4.27	.	.Q	.V	.	.
16.217	0.3432	3.95	.	.Q	.V	.	.
16.233	0.3482	3.62	.	.Q	.V	.	.
16.250	0.3527	3.30	.	.Q	.V	.	.
16.267	0.3568	2.98	.	.Q	.V	.	.
16.283	0.3605	2.66	.	.Q	.V	.	.
16.300	0.3637	2.33	.	.Q	.V	.	.
16.317	0.3664	2.01	.	.Q	.V	.	.
16.333	0.3688	1.69	.	.Q	.V	.	.
16.350	0.3706	1.36	.	.Q	.V	.	.
16.367	0.3721	1.04	.	.Q	.V	.	.
16.383	0.3732	0.84	.	.Q	.V	.	.
16.400	0.3744	0.83	.	.Q	.V	.	.
16.417	0.3755	0.81	.	.Q	.V	.	.
16.433	0.3766	0.80	.	.Q	.V	.	.
16.450	0.3777	0.79	.	.Q	.V	.	.
16.467	0.3787	0.77	.	.Q	.V	.	.
16.483	0.3798	0.76	.	.Q	.V	.	.
16.500	0.3808	0.74	.	.Q	.V	.	.
16.517	0.3818	0.73	.	.Q	.V	.	.
16.533	0.3828	0.72	.	.Q	.V	.	.
16.550	0.3838	0.70	.	.Q	.V	.	.
16.567	0.3847	0.69	.	.Q	.V	.	.
16.583	0.3857	0.68	.	.Q	.V	.	.
16.600	0.3866	0.67	.	.Q	.V	.	.
16.617	0.3875	0.65	.	.Q	.V	.	.
16.633	0.3884	0.64	.	.Q	.V	.	.
16.650	0.3892	0.63	.	.Q	.V	.	.
16.667	0.3901	0.62	.	.Q	.V	.	.
16.683	0.3909	0.61	.	.Q	.V	.	.
16.700	0.3918	0.60	.	.Q	.V	.	.
16.717	0.3926	0.58	.	.Q	.V	.	.
16.733	0.3933	0.57	.	.Q	.V	.	.
16.750	0.3941	0.56	.	.Q	.V	.	.
16.767	0.3949	0.55	.	.Q	.V	.	.
16.783	0.3956	0.55	.	.Q	.V	.	.
16.800	0.3964	0.54	.	.Q	.V	.	.
16.817	0.3971	0.53	.	.Q	.V	.	.
16.833	0.3978	0.53	.	.Q	.V	.	.
16.850	0.3985	0.52	.	.Q	.V	.	.
16.867	0.3993	0.51	.	.Q	.V	.	.
16.883	0.3999	0.50	.	.Q	.V	.	.
16.900	0.4006	0.50	.	.Q	.V	.	.
16.917	0.4013	0.49	.	.Q	.V	.	.
16.933	0.4020	0.48	.	.Q	.V	.	.
16.950	0.4026	0.48	.	.Q	.V	.	.

16.967	0.4033	0.47	.	.Q	.	.	.V	.
16.983	0.4039	0.47	.	.Q	.	.	.V	.
17.000	0.4046	0.46	.	.Q	.	.	.V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	825.0
20%	195.0
30%	130.0
40%	90.0
50%	75.0
60%	65.0
70%	45.0
80%	30.0
90%	15.0

 FLOW PROCESS FROM NODE 228.00 TO NODE 228.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

 STREAM HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	5.0	10.0	15.0	20.0
15.800	0.9411	4.00	.	.Q	.V	.	.
15.817	0.9468	4.18	.	.Q	.V	.	.
15.833	0.9528	4.37	.	.Q	.V	.	.
15.850	0.9591	4.56	.	.Q	.V	.	.
15.867	0.9657	4.75	.	.Q	.V	.	.
15.883	0.9725	4.94	.	.Q	.V	.	.
15.900	0.9796	5.13	.	.Q	.V	.	.
15.917	0.9869	5.33	.	.Q	.V	.	.
15.933	0.9945	5.52	.	.Q	.V	.	.
15.950	1.0024	5.71	.	.Q	.V	.	.
15.967	1.0105	5.91	.	.Q	.V	.	.
15.983	1.0189	6.10	.	.Q	.V	.	.
16.000	1.0276	6.29	.	.Q	.V	.	.
16.017	1.0373	7.04	.	.Q	.V	.	.
16.033	1.0488	8.37	.	.Q	.V	.	.
16.050	1.0622	9.74	.	.Q	.V	.	.
16.067	1.0775	11.10	.	.Q	.V	.	.
16.083	1.0947	12.46	.	.Q	.V	.	.
16.100	1.1137	13.83	.	.Q	.V	.	.
16.117	1.1346	15.18	.	.Q	.V	.	.
16.133	1.1574	16.54	.	.Q	.V	.	.
16.150	1.1823	18.06	.	.Q	.V	.	.
16.167	1.2061	17.30	.	.Q	.V	.	.
16.183	1.2287	16.37	.	.Q	.V	.	.
16.200	1.2492	14.88	.	.Q	.V	.	.
16.217	1.2674	13.22	.	.Q	.V	.	.
16.233	1.2833	11.55	.	.Q	.V	.	.
16.250	1.2969	9.89	.	.Q	.V	.	.

16.267	1.3082	8.23	.	.	Q	.	V.	.
16.283	1.3173	6.56	.	.	Q	.	V.	.
16.300	1.3244	5.19	.	.	Q	.	V.	.
16.317	1.3308	4.64	.	.	Q.	.	V.	.
16.333	1.3366	4.19	.	.	Q	.	V.	.
16.350	1.3418	3.76	.	.	Q	.	V.	.
16.367	1.3463	3.32	.	.	Q	.	V.	.
16.383	1.3505	3.01	.	.	Q	.	V	.
16.400	1.3544	2.88	.	.	Q	.	V	.
16.417	1.3582	2.75	.	.	Q	.	V	.
16.433	1.3618	2.62	.	.	Q	.	V	.
16.450	1.3653	2.54	.	.	Q	.	V	.
16.467	1.3688	2.52	.	.	Q	.	V	.
16.483	1.3723	2.49	.	.	Q	.	V	.
16.500	1.3757	2.47	.	.	Q	.	V	.
16.517	1.3790	2.45	.	.	Q	.	V	.
16.533	1.3824	2.42	.	.	Q	.	V	.
16.550	1.3857	2.40	.	.	Q	.	V	.
16.567	1.3889	2.37	.	.	Q	.	V	.
16.583	1.3922	2.35	.	.	Q	.	.V	.
16.600	1.3953	2.31	.	.	Q	.	.V	.
16.617	1.3985	2.27	.	.	Q	.	.V	.
16.633	1.4015	2.23	.	.	Q	.	.V	.
16.650	1.4045	2.18	.	.	Q	.	.V	.
16.667	1.4075	2.14	.	.	Q	.	.V	.
16.683	1.4104	2.10	.	.	Q	.	.V	.
16.700	1.4132	2.06	.	.	Q	.	.V	.
16.717	1.4160	2.02	.	.	Q	.	.V	.
16.733	1.4187	1.98	.	.	Q	.	.V	.
16.750	1.4214	1.95	.	.	Q	.	.V	.
16.767	1.4241	1.92	.	.	Q	.	.V	.
16.783	1.4267	1.89	.	.	Q	.	.V	.
16.800	1.4292	1.86	.	.	Q	.	.V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1009.0
10%	630.0
20%	180.0
30%	110.0
40%	75.0
50%	65.0
60%	55.0
70%	40.0
80%	30.0
90%	20.0

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
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 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * THE VILLAGE - TTM 17439 *
- * 100-YR PROPOSED CONDITION - LINE N COMPLEX CALIB PD *
- * MCHANDOO *

FILE NAME: PROP00N.DAT
 TIME/DATE OF STUDY: 17:18 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J of the Hydrology Manual provides estimates of runoff hydrograph and runoff volume for watersheds whose time of concentration is less than 25 minutes. The PROGRAM User should check the applicability of using the small area unit hydrograph procedures, and follow the guidelines in Sections J and K.5 in complex watershed modeling.

 FLOW PROCESS FROM NODE 202.00 TO NODE 207.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
 TOTAL CATCHMENT AREA(ACRES) = 4.30
 SOIL-LOSS RATE, Fm, (INCH/HR) = 0.068
 LOW LOSS FRACTION = 0.097
 TIME OF CONCENTRATION(MIN.) = 8.47
 SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
 USER SPECIFIED RAINFALL VALUES ARE USED:
 RETURN FREQUENCY(YEARS) = 100
 5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.56
 30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.17
 1-HOUR POINT RAINFALL VALUE(INCHES) = 1.56
 3-HOUR POINT RAINFALL VALUE(INCHES) = 2.61
 6-HOUR POINT RAINFALL VALUE(INCHES) = 3.61
 24-HOUR POINT RAINFALL VALUE(INCHES) = 6.05

 TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.78
 TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.39

=====

24 - HOUR STORM
 RUNOFF HYDROGRAPH

=====

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	4.7	9.4	14.1	18.8
14.000	0.6494	1.37	. Q	. V	.	.	.
14.017	0.6513	1.38	. Q	. V	.	.	.
14.033	0.6532	1.38	. Q	. V	.	.	.
14.050	0.6551	1.39	. Q	. V	.	.	.
14.067	0.6571	1.40	. Q	. V	.	.	.
14.083	0.6590	1.41	. Q	. V	.	.	.
14.100	0.6609	1.41	. Q	. V	.	.	.
14.117	0.6629	1.42	. Q	. V	.	.	.
14.133	0.6649	1.43	. Q	. V	.	.	.
14.150	0.6669	1.44	. Q	. V	.	.	.
14.167	0.6688	1.45	. Q	. V	.	.	.
14.183	0.6709	1.45	. Q	. V	.	.	.
14.200	0.6729	1.46	. Q	. V	.	.	.
14.217	0.6749	1.46	. Q	. V	.	.	.
14.233	0.6769	1.47	. Q	. V	.	.	.
14.250	0.6789	1.47	. Q	. V	.	.	.
14.267	0.6810	1.48	. Q	. V	.	.	.
14.283	0.6830	1.48	. Q	. V	.	.	.
14.300	0.6851	1.49	. Q	. V	.	.	.
14.317	0.6871	1.49	. Q	. V	.	.	.
14.333	0.6892	1.50	. Q	. V	.	.	.
14.350	0.6913	1.51	. Q	. V	.	.	.
14.367	0.6934	1.52	. Q	. V	.	.	.
14.383	0.6955	1.53	. Q	. V	.	.	.
14.400	0.6976	1.54	. Q	. V	.	.	.
14.417	0.6998	1.56	. Q	. V	.	.	.
14.433	0.7019	1.57	. Q	. V	.	.	.
14.450	0.7041	1.58	. Q	. V	.	.	.
14.467	0.7063	1.58	. Q	. V	.	.	.
14.483	0.7084	1.59	. Q	. V	.	.	.
14.500	0.7106	1.60	. Q	. V	.	.	.
14.517	0.7129	1.60	. Q	. V	.	.	.
14.533	0.7151	1.61	. Q	. V	.	.	.
14.550	0.7173	1.61	. Q	. V	.	.	.
14.567	0.7195	1.62	. Q	. V	.	.	.
14.583	0.7218	1.62	. Q	. V	.	.	.
14.600	0.7240	1.63	. Q	. V	.	.	.
14.617	0.7263	1.65	. Q	. V	.	.	.
14.633	0.7286	1.66	. Q	. V	.	.	.
14.650	0.7309	1.67	. Q	. V	.	.	.
14.667	0.7332	1.69	. Q	. V	.	.	.
14.683	0.7355	1.70	. Q	. V	.	.	.
14.700	0.7379	1.71	. Q	. V	.	.	.
14.717	0.7403	1.73	. Q	. V	.	.	.
14.733	0.7427	1.74	. Q	. V	.	.	.
14.750	0.7451	1.75	. Q	. V	.	.	.
14.767	0.7475	1.76	. Q	. V	.	.	.
14.783	0.7499	1.77	. Q	. V	.	.	.
14.800	0.7524	1.78	. Q	. V	.	.	.
14.817	0.7548	1.78	. Q	. V	.	.	.

14.833	0.7573	1.79	.	Q	.	V	.	.	.
14.850	0.7598	1.80	.	Q	.	V	.	.	.
14.867	0.7623	1.81	.	Q	.	V	.	.	.
14.883	0.7648	1.82	.	Q	.	V	.	.	.
14.900	0.7673	1.84	.	Q	.	V	.	.	.
14.917	0.7699	1.86	.	Q	.	V	.	.	.
14.933	0.7724	1.88	.	Q	.	V	.	.	.
14.950	0.7751	1.89	.	Q	.	V	.	.	.
14.967	0.7777	1.91	.	Q	.	V	.	.	.
14.983	0.7804	1.93	.	Q	.	V	.	.	.
15.000	0.7830	1.95	.	Q	.	V	.	.	.
15.017	0.7858	1.97	.	Q	.	V	.	.	.
15.033	0.7885	1.98	.	Q	.	V	.	.	.
15.050	0.7912	2.00	.	Q	.	V	.	.	.
15.067	0.7940	2.01	.	Q	.	V	.	.	.
15.083	0.7968	2.02	.	Q	.	V	.	.	.
15.100	0.7996	2.03	.	Q	.	V	.	.	.
15.117	0.8024	2.04	.	Q	.	V	.	.	.
15.133	0.8052	2.05	.	Q	.	V	.	.	.
15.150	0.8081	2.06	.	Q	.	V	.	.	.
15.167	0.8109	2.08	.	Q	.	V	.	.	.
15.183	0.8138	2.11	.	Q	.	V	.	.	.
15.200	0.8168	2.14	.	Q	.	V	.	.	.
15.217	0.8198	2.17	.	Q	.	V	.	.	.
15.233	0.8228	2.20	.	Q	.	V	.	.	.
15.250	0.8259	2.23	.	Q	.	V	.	.	.
15.267	0.8290	2.26	.	Q	.	V	.	.	.
15.283	0.8321	2.29	.	Q	.	V	.	.	.
15.300	0.8353	2.31	.	Q	.	V	.	.	.
15.317	0.8385	2.33	.	Q	.	V	.	.	.
15.333	0.8418	2.35	.	Q	.	V	.	.	.
15.350	0.8450	2.36	.	Q	.	V	.	.	.
15.367	0.8483	2.38	.	Q	.	V	.	.	.
15.383	0.8516	2.40	.	Q	.	V	.	.	.
15.400	0.8549	2.41	.	Q	.	V	.	.	.
15.417	0.8583	2.43	.	Q	.	V	.	.	.
15.433	0.8616	2.45	.	Q	.	V	.	.	.
15.450	0.8650	2.46	.	Q	.	V	.	.	.
15.467	0.8685	2.49	.	Q	.	V	.	.	.
15.483	0.8719	2.51	.	Q	.	V	.	.	.
15.500	0.8754	2.53	.	Q	.	V	.	.	.
15.517	0.8789	2.55	.	Q	.	V	.	.	.
15.533	0.8825	2.58	.	Q	.	V	.	.	.
15.550	0.8860	2.60	.	Q	.	V	.	.	.
15.567	0.8897	2.62	.	Q	.	V	.	.	.
15.583	0.8933	2.65	.	Q	.	V	.	.	.
15.600	0.8970	2.69	.	Q	.	V	.	.	.
15.617	0.9008	2.73	.	Q	.	V	.	.	.
15.633	0.9046	2.77	.	Q	.	V	.	.	.
15.650	0.9084	2.81	.	Q	.	V	.	.	.
15.667	0.9124	2.86	.	Q	.	V	.	.	.
15.683	0.9164	2.90	.	Q	.	V	.	.	.
15.700	0.9204	2.94	.	Q	.	V	.	.	.
15.717	0.9245	2.99	.	Q	.	V	.	.	.
15.733	0.9288	3.08	.	Q	.	V	.	.	.
15.750	0.9332	3.24	.	Q	.	.V	.	.	.
15.767	0.9379	3.39	.	Q	.	.V	.	.	.
15.783	0.9428	3.55	.	Q	.	.V	.	.	.
15.800	0.9479	3.71	.	Q	.	.V	.	.	.
15.817	0.9532	3.86	.	Q	.	.V	.	.	.
15.833	0.9588	4.02	.	Q	.	.V	.	.	.
15.850	0.9645	4.18	.	Q	.	.V	.	.	.
15.867	0.9705	4.34	.	Q	.	.V	.	.	.
15.883	0.9767	4.53	.	Q	.	.V	.	.	.

15.900	0.9833	4.73	.	Q	.	V	.	.	.
15.917	0.9900	4.93	.	Q	.	V	.	.	.
15.933	0.9971	5.13	.	Q	.	V	.	.	.
15.950	1.0044	5.33	.	.Q	.	V	.	.	.
15.967	1.0121	5.53	.	.Q	.	V	.	.	.
15.983	1.0200	5.73	.	.Q	.	V	.	.	.
16.000	1.0281	5.93	.	.Q	.	V	.	.	.
16.017	1.0375	6.78	.	.Q	.	V	.	.	.
16.033	1.0489	8.29	.	.	Q	V	.	.	.
16.050	1.0624	9.80	.	.	Q	V	.	.	.
16.067	1.0779	11.31	.	.	.Q	.	.	.	.
16.083	1.0956	12.82	.	.	.	V	Q	.	.
16.100	1.1153	14.32	.	.	.	V	Q	.	.
16.117	1.1371	15.83	.	.	.	V	.	Q	.
16.133	1.1610	17.34	.	.	.	V	.	.	Q
16.150	1.1869	18.80	.	.	.	V	.	.	Q
16.167	1.2103	16.95	.	.	.	V	.	.	Q
16.183	1.2311	15.14	.	.	.	V	.	Q	.
16.200	1.2495	13.33	.	.	.	.	Q	.	.
16.217	1.2654	11.53	.	.	.	Q	V	.	.
16.233	1.2788	9.72	.	.	Q	.	V	.	.
16.250	1.2897	7.92	.	.	Q	.	V	.	.
16.267	1.2981	6.11	.	.	Q	.	V	.	.
16.283	1.3040	4.31	.	.	Q	.	V	.	.
16.300	1.3088	3.44	.	.	Q	.	V	.	.
16.317	1.3133	3.31	.	.	Q	.	V	.	.
16.333	1.3177	3.17	.	.	Q	.	V	.	.
16.350	1.3219	3.04	.	.	Q	.	V	.	.
16.367	1.3259	2.90	.	.	Q	.	V	.	.
16.383	1.3297	2.77	.	.	Q	.	V	.	.
16.400	1.3333	2.64	.	.	Q	.	V	.	.
16.417	1.3368	2.50	.	.	Q	.	V	.	.
16.433	1.3401	2.39	.	.	Q	.	V	.	.
16.450	1.3433	2.36	.	.	Q	.	V	.	.
16.467	1.3465	2.33	.	.	Q	.	V	.	.
16.483	1.3497	2.31	.	.	Q	.	V	.	.
16.500	1.3528	2.29	.	.	Q	.	V	.	.
16.517	1.3560	2.26	.	.	Q	.	V	.	.
16.533	1.3591	2.24	.	.	Q	.	V	.	.
16.550	1.3621	2.22	.	.	Q	.	V	.	.
16.567	1.3651	2.19	.	.	Q	.	V	.	.
16.583	1.3681	2.16	.	.	Q	.	V	.	.
16.600	1.3710	2.13	.	.	Q	.	V	.	.
16.617	1.3739	2.09	.	.	Q	.	V	.	.
16.633	1.3768	2.06	.	.	Q	.	.V	.	.
16.650	1.3796	2.02	.	.	Q	.	.V	.	.
16.667	1.3823	1.99	.	.	Q	.	.V	.	.
16.683	1.3850	1.95	.	.	Q	.	.V	.	.
16.700	1.3876	1.92	.	.	Q	.	.V	.	.
16.717	1.3902	1.89	.	.	Q	.	.V	.	.
16.733	1.3928	1.86	.	.	Q	.	.V	.	.
16.750	1.3953	1.84	.	.	Q	.	.V	.	.
16.767	1.3978	1.81	.	.	Q	.	.V	.	.
16.783	1.4003	1.79	.	.	Q	.	.V	.	.
16.800	1.4027	1.76	.	.	Q	.	.V	.	.
16.817	1.4051	1.74	.	.	Q	.	.V	.	.
16.833	1.4075	1.72	.	.	Q	.	.V	.	.
16.850	1.4098	1.69	.	.	Q	.	.V	.	.
16.867	1.4121	1.67	.	.	Q	.	.V	.	.
16.883	1.4144	1.65	.	.	Q	.	.V	.	.
16.900	1.4166	1.64	.	.	Q	.	.V	.	.
16.917	1.4189	1.62	.	.	Q	.	.V	.	.
16.933	1.4211	1.60	.	.	Q	.	.V	.	.
16.950	1.4233	1.58	.	.	Q	.	.V	.	.

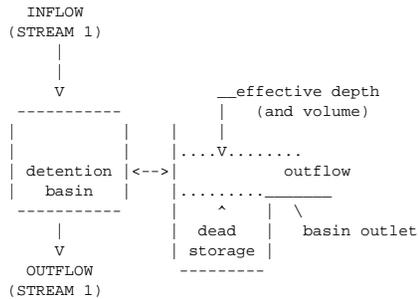
16.967	1.4254	1.57	. Q	.	.	. V	.
16.983	1.4275	1.55	. Q	.	.	. V	.
17.000	1.4297	1.53	. Q	.	.	. V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	535.0
20%	145.0
30%	90.0
40%	70.0
50%	60.0
60%	50.0
70%	35.0
80%	25.0
90%	15.0

 FLOW PROCESS FROM NODE 207.00 TO NODE 207.00 IS CODE = 3.2

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #1<<<<<



ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 1 THROUGH A FLOW-THROUGH DETENTION BASIN

SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

DEAD STORAGE(AF) = 0.000
 SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
 SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.50	0.01	0.009
3	2.00	0.02	0.036
4	2.75	2.89	0.051

5	3.25	10.11	0.060
6	3.50	13.00	0.064
7	3.75	15.50	0.069
8	4.00	17.40	0.073

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MODIFIED-PULS BASIN ROUTING MODEL RESULTS(1-MINUTE COMPUTATION INTERVALS):
 (Note: Computed EFFECTIVE DEPTH and VOLUME are estimated at the clock time; MEAN OUTFLOW is the average value during the unit interval.)

CLOCK TIME (HRS)	DEAD-STORAGE FILLED(AF)	INFLOW (CFS)	LOSS (CFS)	EFFECTIVE DEPTH(FT)	MEAN OUTFLOW (CFS)	EFFECTIVE VOLUME(AF)
15.017	0.000	1.97	0.00	2.49	1.9	0.046
15.033	0.000	1.98	0.00	2.50	1.9	0.046
15.050	0.000	2.00	0.00	2.50	1.9	0.046
15.067	0.000	2.01	0.00	2.51	2.0	0.046
15.083	0.000	2.02	0.00	2.51	2.0	0.046
15.100	0.000	2.03	0.00	2.51	2.0	0.046
15.117	0.000	2.04	0.00	2.52	2.0	0.046
15.133	0.000	2.05	0.00	2.52	2.0	0.046
15.150	0.000	2.06	0.00	2.52	2.0	0.046
15.167	0.000	2.08	0.00	2.53	2.0	0.047
15.183	0.000	2.11	0.00	2.53	2.0	0.047
15.200	0.000	2.14	0.00	2.54	2.1	0.047
15.217	0.000	2.17	0.00	2.54	2.1	0.047
15.233	0.000	2.20	0.00	2.55	2.1	0.047
15.250	0.000	2.23	0.00	2.56	2.1	0.047
15.267	0.000	2.26	0.00	2.56	2.2	0.047
15.283	0.000	2.29	0.00	2.57	2.2	0.047
15.300	0.000	2.31	0.00	2.58	2.2	0.048
15.317	0.000	2.33	0.00	2.58	2.2	0.048
15.333	0.000	2.35	0.00	2.59	2.3	0.048
15.350	0.000	2.36	0.00	2.59	2.3	0.048
15.367	0.000	2.38	0.00	2.60	2.3	0.048
15.383	0.000	2.40	0.00	2.60	2.3	0.048
15.400	0.000	2.41	0.00	2.61	2.3	0.048
15.417	0.000	2.43	0.00	2.61	2.4	0.048
15.433	0.000	2.45	0.00	2.62	2.4	0.048
15.450	0.000	2.46	0.00	2.62	2.4	0.048
15.467	0.000	2.49	0.00	2.63	2.4	0.049
15.483	0.000	2.51	0.00	2.63	2.4	0.049
15.500	0.000	2.53	0.00	2.64	2.5	0.049
15.517	0.000	2.55	0.00	2.64	2.5	0.049
15.533	0.000	2.58	0.00	2.65	2.5	0.049
15.550	0.000	2.60	0.00	2.66	2.5	0.049
15.567	0.000	2.62	0.00	2.66	2.5	0.049
15.583	0.000	2.65	0.00	2.67	2.6	0.049
15.600	0.000	2.69	0.00	2.67	2.6	0.049
15.617	0.000	2.73	0.00	2.68	2.6	0.050
15.633	0.000	2.77	0.00	2.69	2.6	0.050
15.650	0.000	2.81	0.00	2.70	2.7	0.050
15.667	0.000	2.86	0.00	2.71	2.7	0.050
15.683	0.000	2.90	0.00	2.72	2.8	0.050
15.700	0.000	2.94	0.00	2.73	2.8	0.051
15.717	0.000	2.99	0.00	2.74	2.8	0.051
15.733	0.000	3.08	0.00	2.75	2.9	0.051
15.750	0.000	3.24	0.00	2.77	3.0	0.051
15.767	0.000	3.39	0.00	2.78	3.2	0.052
15.783	0.000	3.55	0.00	2.79	3.4	0.052
15.800	0.000	3.71	0.00	2.80	3.6	0.052
15.817	0.000	3.86	0.00	2.81	3.7	0.052

15.833	0.000	4.02	0.00	2.82	3.9	0.052
15.850	0.000	4.18	0.00	2.83	4.0	0.053
15.867	0.000	4.34	0.00	2.85	4.2	0.053
15.883	0.000	4.53	0.00	2.86	4.4	0.053
15.900	0.000	4.73	0.00	2.87	4.6	0.053
15.917	0.000	4.93	0.00	2.89	4.8	0.053
15.933	0.000	5.13	0.00	2.90	4.9	0.054
15.950	0.000	5.33	0.00	2.91	5.1	0.054
15.967	0.000	5.53	0.00	2.93	5.3	0.054
15.983	0.000	5.73	0.00	2.94	5.5	0.054
16.000	0.000	5.93	0.00	2.95	5.7	0.055
16.017	0.000	6.78	0.00	3.00	6.2	0.056
16.033	0.000	8.29	0.00	3.09	7.1	0.057
16.050	0.000	9.80	0.00	3.19	8.5	0.059
16.067	0.000	11.31	0.00	3.30	9.9	0.061
16.083	0.000	12.82	0.00	3.42	11.4	0.063
16.100	0.000	14.32	0.00	3.54	12.8	0.065
16.117	0.000	15.83	0.00	3.67	14.1	0.067
16.133	0.000	17.34	0.00	3.82	15.3	0.070
16.150	0.000	18.80	0.00	4.00	16.7	0.073
16.167	0.000	16.95	0.00	3.97	17.3	0.073
16.183	0.000	15.14	0.00	3.84	16.7	0.070
16.200	0.000	13.33	0.00	3.67	15.5	0.067
16.217	0.000	11.53	0.00	3.51	13.9	0.064
16.233	0.000	9.72	0.00	3.32	12.0	0.061
16.250	0.000	7.92	0.00	3.16	9.9	0.058
16.267	0.000	6.11	0.00	3.03	7.9	0.056
16.283	0.000	4.31	0.00	2.90	6.0	0.054
16.300	0.000	3.44	0.00	2.82	4.5	0.052
16.317	0.000	3.31	0.00	2.79	3.7	0.052
16.333	0.000	3.17	0.00	2.78	3.4	0.051
16.350	0.000	3.04	0.00	2.76	3.2	0.051
16.367	0.000	2.90	0.00	2.75	3.0	0.051
16.383	0.000	2.77	0.00	2.74	2.9	0.051
16.400	0.000	2.64	0.00	2.73	2.8	0.051
16.417	0.000	2.50	0.00	2.71	2.8	0.050
16.433	0.000	2.39	0.00	2.69	2.7	0.050
16.450	0.000	2.36	0.00	2.67	2.6	0.049
16.467	0.000	2.33	0.00	2.66	2.6	0.049
16.483	0.000	2.31	0.00	2.64	2.5	0.049
16.500	0.000	2.29	0.00	2.63	2.5	0.049
16.517	0.000	2.26	0.00	2.62	2.4	0.048
16.533	0.000	2.24	0.00	2.61	2.4	0.048
16.550	0.000	2.22	0.00	2.60	2.3	0.048
16.567	0.000	2.19	0.00	2.59	2.3	0.048
16.583	0.000	2.16	0.00	2.59	2.3	0.048
16.600	0.000	2.13	0.00	2.58	2.2	0.048
16.617	0.000	2.09	0.00	2.57	2.2	0.047
16.633	0.000	2.06	0.00	2.56	2.2	0.047
16.650	0.000	2.02	0.00	2.55	2.2	0.047
16.667	0.000	1.99	0.00	2.54	2.1	0.047
16.683	0.000	1.95	0.00	2.53	2.1	0.047
16.700	0.000	1.92	0.00	2.53	2.0	0.047
16.717	0.000	1.89	0.00	2.52	2.0	0.046
16.733	0.000	1.86	0.00	2.51	2.0	0.046
16.750	0.000	1.84	0.00	2.50	2.0	0.046
16.767	0.000	1.81	0.00	2.49	1.9	0.046
16.783	0.000	1.79	0.00	2.49	1.9	0.046
16.800	0.000	1.76	0.00	2.48	1.9	0.046
16.817	0.000	1.74	0.00	2.47	1.8	0.045
16.833	0.000	1.72	0.00	2.47	1.8	0.045
16.850	0.000	1.69	0.00	2.46	1.8	0.045
16.867	0.000	1.67	0.00	2.45	1.8	0.045
16.883	0.000	1.65	0.00	2.45	1.7	0.045

16.900	0.000	1.64	0.00	2.44	1.7	0.045
16.917	0.000	1.62	0.00	2.44	1.7	0.045
16.933	0.000	1.60	0.00	2.43	1.7	0.045
16.950	0.000	1.58	0.00	2.43	1.7	0.045
16.967	0.000	1.57	0.00	2.42	1.6	0.044
16.983	0.000	1.55	0.00	2.42	1.6	0.044
17.000	0.000	1.53	0.00	2.41	1.6	0.044
17.017	0.000	1.52	0.00	2.41	1.6	0.044
17.033	0.000	1.50	0.00	2.40	1.6	0.044
17.050	0.000	1.49	0.00	2.40	1.5	0.044
17.067	0.000	1.47	0.00	2.39	1.5	0.044
17.083	0.000	1.46	0.00	2.39	1.5	0.044
17.100	0.000	1.45	0.00	2.39	1.5	0.044
17.117	0.000	1.43	0.00	2.38	1.5	0.044
17.133	0.000	1.42	0.00	2.38	1.5	0.044
17.150	0.000	1.41	0.00	2.37	1.5	0.043
17.167	0.000	1.39	0.00	2.37	1.4	0.043
17.183	0.000	1.38	0.00	2.37	1.4	0.043
17.200	0.000	1.37	0.00	2.36	1.4	0.043
17.217	0.000	1.36	0.00	2.36	1.4	0.043
17.233	0.000	1.35	0.00	2.36	1.4	0.043
17.250	0.000	1.34	0.00	2.35	1.4	0.043
17.267	0.000	1.33	0.00	2.35	1.4	0.043
17.283	0.000	1.32	0.00	2.35	1.4	0.043
17.300	0.000	1.31	0.00	2.35	1.3	0.043
17.317	0.000	1.30	0.00	2.34	1.3	0.043
17.333	0.000	1.29	0.00	2.34	1.3	0.043
17.350	0.000	1.28	0.00	2.34	1.3	0.043
17.367	0.000	1.27	0.00	2.33	1.3	0.043
17.383	0.000	1.26	0.00	2.33	1.3	0.043
17.400	0.000	1.25	0.00	2.33	1.3	0.043
17.417	0.000	1.24	0.00	2.33	1.3	0.043
17.433	0.000	1.23	0.00	2.32	1.3	0.042
17.450	0.000	1.23	0.00	2.32	1.3	0.042
17.467	0.000	1.22	0.00	2.32	1.3	0.042
17.483	0.000	1.21	0.00	2.32	1.2	0.042
17.500	0.000	1.20	0.00	2.32	1.2	0.042
17.517	0.000	1.19	0.00	2.31	1.2	0.042
17.533	0.000	1.19	0.00	2.31	1.2	0.042
17.550	0.000	1.18	0.00	2.31	1.2	0.042
17.567	0.000	1.17	0.00	2.31	1.2	0.042
17.583	0.000	1.16	0.00	2.31	1.2	0.042
17.600	0.000	1.16	0.00	2.30	1.2	0.042
17.617	0.000	1.15	0.00	2.30	1.2	0.042
17.633	0.000	1.14	0.00	2.30	1.2	0.042
17.650	0.000	1.14	0.00	2.30	1.2	0.042
17.667	0.000	1.13	0.00	2.30	1.2	0.042
17.683	0.000	1.12	0.00	2.29	1.2	0.042
17.700	0.000	1.12	0.00	2.29	1.1	0.042
17.717	0.000	1.11	0.00	2.29	1.1	0.042
17.733	0.000	1.11	0.00	2.29	1.1	0.042
17.750	0.000	1.10	0.00	2.29	1.1	0.042
17.767	0.000	1.09	0.00	2.29	1.1	0.042
17.783	0.000	1.09	0.00	2.28	1.1	0.042
17.800	0.000	1.08	0.00	2.28	1.1	0.042
17.817	0.000	1.08	0.00	2.28	1.1	0.042
17.833	0.000	1.07	0.00	2.28	1.1	0.042
17.850	0.000	1.06	0.00	2.28	1.1	0.042
17.867	0.000	1.06	0.00	2.28	1.1	0.042
17.883	0.000	1.05	0.00	2.27	1.1	0.041
17.900	0.000	1.05	0.00	2.27	1.1	0.041
17.917	0.000	1.04	0.00	2.27	1.1	0.041
17.933	0.000	1.04	0.00	2.27	1.1	0.041
17.950	0.000	1.03	0.00	2.27	1.1	0.041

17.967	0.000	1.03	0.00	2.27	1.0	0.041
17.983	0.000	1.02	0.00	2.27	1.0	0.041
18.000	0.000	1.01	0.00	2.26	1.0	0.041
18.017	0.000	0.99	0.00	2.26	1.0	0.041
18.033	0.000	0.98	0.00	2.26	1.0	0.041
18.050	0.000	0.96	0.00	2.26	1.0	0.041
18.067	0.000	0.94	0.00	2.25	1.0	0.041
18.083	0.000	0.93	0.00	2.25	1.0	0.041
18.100	0.000	0.91	0.00	2.24	1.0	0.041
18.117	0.000	0.89	0.00	2.24	1.0	0.041
18.133	0.000	0.88	0.00	2.24	0.9	0.041
18.150	0.000	0.86	0.00	2.23	0.9	0.041
18.167	0.000	0.85	0.00	2.23	0.9	0.041
18.183	0.000	0.83	0.00	2.22	0.9	0.040
18.200	0.000	0.81	0.00	2.22	0.9	0.040
18.217	0.000	0.80	0.00	2.22	0.9	0.040
18.233	0.000	0.78	0.00	2.21	0.8	0.040
18.250	0.000	0.77	0.00	2.21	0.8	0.040
18.267	0.000	0.75	0.00	2.20	0.8	0.040
18.283	0.000	0.75	0.00	2.20	0.8	0.040
18.300	0.000	0.74	0.00	2.20	0.8	0.040
18.317	0.000	0.74	0.00	2.20	0.8	0.040
18.333	0.000	0.74	0.00	2.19	0.8	0.040
18.350	0.000	0.73	0.00	2.19	0.8	0.040
18.367	0.000	0.73	0.00	2.19	0.8	0.040
18.383	0.000	0.73	0.00	2.19	0.7	0.040
18.400	0.000	0.72	0.00	2.19	0.7	0.040
18.417	0.000	0.72	0.00	2.19	0.7	0.040
18.433	0.000	0.72	0.00	2.19	0.7	0.040
18.450	0.000	0.71	0.00	2.18	0.7	0.040
18.467	0.000	0.71	0.00	2.18	0.7	0.040
18.483	0.000	0.71	0.00	2.18	0.7	0.040
18.500	0.000	0.70	0.00	2.18	0.7	0.040
18.517	0.000	0.70	0.00	2.18	0.7	0.040
18.533	0.000	0.70	0.00	2.18	0.7	0.040
18.550	0.000	0.69	0.00	2.18	0.7	0.040
18.567	0.000	0.69	0.00	2.18	0.7	0.040
18.583	0.000	0.69	0.00	2.18	0.7	0.040
18.600	0.000	0.69	0.00	2.18	0.7	0.040
18.617	0.000	0.68	0.00	2.18	0.7	0.040
18.633	0.000	0.68	0.00	2.17	0.7	0.039
18.650	0.000	0.68	0.00	2.17	0.7	0.039
18.667	0.000	0.67	0.00	2.17	0.7	0.039
18.683	0.000	0.67	0.00	2.17	0.7	0.039
18.700	0.000	0.67	0.00	2.17	0.7	0.039
18.717	0.000	0.67	0.00	2.17	0.7	0.039
18.733	0.000	0.66	0.00	2.17	0.7	0.039
18.750	0.000	0.66	0.00	2.17	0.7	0.039
18.767	0.000	0.66	0.00	2.17	0.7	0.039
18.783	0.000	0.66	0.00	2.17	0.7	0.039
18.800	0.000	0.65	0.00	2.17	0.7	0.039
18.817	0.000	0.65	0.00	2.17	0.7	0.039
18.833	0.000	0.65	0.00	2.17	0.7	0.039
18.850	0.000	0.65	0.00	2.17	0.7	0.039
18.867	0.000	0.64	0.00	2.16	0.7	0.039
18.883	0.000	0.64	0.00	2.16	0.6	0.039
18.900	0.000	0.64	0.00	2.16	0.6	0.039
18.917	0.000	0.64	0.00	2.16	0.6	0.039
18.933	0.000	0.63	0.00	2.16	0.6	0.039
18.950	0.000	0.63	0.00	2.16	0.6	0.039
18.967	0.000	0.63	0.00	2.16	0.6	0.039
18.983	0.000	0.63	0.00	2.16	0.6	0.039
19.000	0.000	0.62	0.00	2.16	0.6	0.039

PROCESS SUMMARY OF STORAGE:

INFLOW VOLUME = 1.775 AF
 BASIN STORAGE = 0.000 AF (WITH 0.000 AF INITIALLY FILLED)
 OUTFLOW VOLUME = 1.775 AF
 LOSS VOLUME = 0.000 AF

 FLOW PROCESS FROM NODE 207.00 TO NODE 208.00 IS CODE = 4

>>>>MODEL PIPEFLOW ROUTING OF STREAM #1<<<<<
 =====

MODEL PIPEFLOW ROUTING OF STREAM 1 WHERE
 STORAGE EFFECTS ARE NEGLECTED WITHIN THE PIPE, FLOW
 VELOCITIES ARE ESTIMATED BY ASSUMING STEADY FLOW FOR
 EACH UNIT INTERVAL(NORMAL DEPTH, Dn), AND FLOWS IN EXCESS
 OF (.82)(DIAMETER) ARE PONDED AT THE UPSTREAM INLET:
 UNIT INTERVAL FLOW VELOCITY COMPUTED USING Dn UP TO
 (0.938)(DIAMETER):

PIPELENGTH(FT) = 75.00 MANNINGS FACTOR = 0.013
 UPSTREAM ELEVATION(FT) = 769.00
 DOWNSTREAM ELEVATION(FT) = 760.00
 PIPE DIAMETER(FT) = 1.50

NORMAL DEPTH VELOCITY PIPE ROUTING RESULTS:

TIME (HRS)	INFLOW (CFS)	VELOCITY (FPS)	OUTFLOW (CFS)	UPSTREAM PONDING(AF)
15.000	1.89	10.79	1.88	0.000
15.017	1.90	10.81	1.90	0.000
15.033	1.92	10.83	1.92	0.000
15.050	1.94	10.85	1.93	0.000
15.067	1.95	10.87	1.95	0.000
15.083	1.97	10.89	1.96	0.000
15.100	1.98	10.91	1.98	0.000
15.117	1.99	10.92	1.99	0.000
15.133	2.01	10.94	2.00	0.000
15.150	2.02	10.95	2.02	0.000
15.167	2.03	10.97	2.03	0.000
15.183	2.05	10.99	2.04	0.000
15.200	2.06	11.01	2.06	0.000
15.217	2.09	11.04	2.08	0.000
15.233	2.11	11.07	2.11	0.000
15.250	2.13	11.10	2.13	0.000
15.267	2.16	11.13	2.16	0.000
15.283	2.18	11.16	2.18	0.000
15.300	2.21	11.20	2.21	0.000
15.317	2.24	11.23	2.24	0.000
15.333	2.26	11.26	2.26	0.000
15.350	2.28	11.29	2.28	0.000
15.367	2.30	11.31	2.30	0.000
15.383	2.32	11.34	2.32	0.000
15.400	2.34	11.36	2.34	0.000
15.417	2.36	11.38	2.36	0.000
15.433	2.38	11.40	2.38	0.000
15.450	2.40	11.43	2.40	0.000
15.467	2.41	11.45	2.41	0.000
15.483	2.43	11.47	2.43	0.000

15.500	2.45	11.50	2.45	0.000
15.517	2.47	11.52	2.47	0.000
15.533	2.50	11.55	2.49	0.000
15.550	2.52	11.58	2.52	0.000
15.567	2.54	11.60	2.54	0.000
15.583	2.56	11.63	2.56	0.000
15.600	2.59	11.66	2.58	0.000
15.617	2.61	11.70	2.61	0.000
15.633	2.65	11.74	2.64	0.000
15.650	2.68	11.78	2.68	0.000
15.667	2.72	11.82	2.71	0.000
15.683	2.75	11.87	2.75	0.000
15.700	2.79	11.92	2.79	0.000
15.717	2.83	11.97	2.83	0.000
15.733	2.90	12.05	2.89	0.000
15.750	3.04	12.23	3.03	0.000
15.767	3.24	12.47	3.22	0.000
15.783	3.40	12.68	3.39	0.000
15.800	3.56	12.88	3.55	0.000
15.817	3.72	13.05	3.71	0.000
15.833	3.88	13.20	3.87	0.000
15.850	4.03	13.35	4.02	0.000
15.867	4.19	13.51	4.18	0.000
15.883	4.36	13.67	4.35	0.000
15.900	4.55	13.85	4.54	0.000
15.917	4.75	14.04	4.74	0.000
15.933	4.95	14.23	4.94	0.000
15.950	5.15	14.42	5.14	0.000
15.967	5.35	14.62	5.34	0.000
15.983	5.55	14.79	5.53	0.000
16.000	5.75	14.93	5.73	0.000
16.017	6.18	15.25	6.15	0.000
16.033	7.14	15.96	7.09	0.000
16.050	8.50	16.78	8.42	0.000
16.067	9.94	17.59	9.87	0.000
16.083	11.38	18.29	11.31	0.000
16.100	12.77	18.79	12.70	0.000
16.117	14.06	19.27	13.99	0.000
16.133	15.34	19.68	15.28	0.000
16.150	16.70	20.09	16.64	0.000
16.167	17.28	20.28	17.26	0.000
16.183	16.67	20.07	16.70	0.000
16.200	15.46	19.71	15.52	0.000
16.217	13.92	19.22	14.00	0.000
16.233	11.99	18.51	12.09	0.000
16.250	9.86	17.55	9.96	0.000
16.267	7.86	16.41	7.97	0.000
16.283	5.98	15.10	6.08	0.000
16.300	4.48	13.78	4.57	0.000
16.317	3.69	13.02	3.74	0.000
16.333	3.37	12.64	3.39	0.000
16.350	3.18	12.40	3.19	0.000
16.367	3.03	12.22	3.04	0.000
16.383	2.92	12.07	2.92	0.000
16.400	2.84	11.98	2.85	0.000
16.417	2.78	11.90	2.78	0.000
16.433	2.70	11.81	2.71	0.000
16.450	2.62	11.71	2.63	0.000
16.467	2.56	11.63	2.56	0.000
16.483	2.50	11.56	2.51	0.000
16.500	2.46	11.50	2.46	0.000
16.517	2.41	11.45	2.42	0.000
16.533	2.38	11.40	2.38	0.000
16.550	2.34	11.36	2.35	0.000

16.567	2.31	11.32	2.31	0.000
16.583	2.28	11.28	2.28	0.000
16.600	2.25	11.24	2.25	0.000
16.617	2.22	11.20	2.22	0.000
16.633	2.18	11.16	2.19	0.000
16.650	2.15	11.12	2.15	0.000
16.667	2.12	11.08	2.12	0.000
16.683	2.08	11.04	2.09	0.000
16.700	2.05	10.99	2.05	0.000
16.717	2.01	10.95	2.02	0.000
16.733	1.98	10.91	1.98	0.000
16.750	1.95	10.87	1.95	0.000
16.767	1.92	10.84	1.92	0.000
16.783	1.89	10.80	1.90	0.000
16.800	1.87	10.77	1.87	0.000
16.817	1.84	10.73	1.84	0.000
16.833	1.81	10.68	1.82	0.000
16.850	1.79	10.53	1.79	0.000
16.867	1.76	10.38	1.76	0.000
16.883	1.74	10.24	1.74	0.000
16.900	1.72	10.11	1.72	0.000
16.917	1.70	9.99	1.70	0.000
16.933	1.68	9.87	1.68	0.000
16.950	1.66	9.75	1.66	0.000
16.967	1.64	9.64	1.64	0.000
16.983	1.62	9.53	1.62	0.000
17.000	1.60	9.42	1.60	0.000
17.017	1.58	9.31	1.58	0.000
17.033	1.57	9.21	1.57	0.000
17.050	1.55	9.12	1.55	0.000
17.067	1.53	9.02	1.53	0.000
17.083	1.52	8.93	1.52	0.000
17.100	1.50	8.84	1.50	0.000
17.117	1.49	8.76	1.49	0.000
17.133	1.47	8.67	1.47	0.000
17.150	1.46	8.59	1.46	0.000
17.167	1.45	8.51	1.45	0.000
17.183	1.43	8.43	1.43	0.000
17.200	1.42	8.36	1.42	0.000
17.217	1.41	8.28	1.41	0.000
17.233	1.40	8.21	1.40	0.000
17.250	1.38	8.14	1.38	0.000
17.267	1.37	8.07	1.37	0.000
17.283	1.36	8.00	1.36	0.000
17.300	1.35	7.94	1.35	0.000
17.317	1.34	7.88	1.34	0.000
17.333	1.33	7.81	1.33	0.000
17.350	1.32	7.75	1.32	0.000
17.367	1.31	7.70	1.31	0.000
17.383	1.30	7.64	1.30	0.000
17.400	1.29	7.58	1.29	0.000
17.417	1.28	7.52	1.28	0.000
17.433	1.27	7.47	1.27	0.000
17.450	1.26	7.42	1.26	0.000
17.467	1.25	7.36	1.25	0.000
17.483	1.24	7.31	1.24	0.000
17.500	1.23	7.26	1.23	0.000
17.517	1.23	7.22	1.23	0.000
17.533	1.22	7.17	1.22	0.000
17.550	1.21	7.12	1.21	0.000
17.567	1.20	7.07	1.20	0.000
17.583	1.19	7.03	1.19	0.000
17.600	1.19	6.98	1.19	0.000
17.617	1.18	6.94	1.18	0.000

17.633	1.17	6.90	1.17	0.000
17.650	1.16	6.85	1.16	0.000
17.667	1.16	6.81	1.16	0.000
17.683	1.15	6.77	1.15	0.000
17.700	1.14	6.73	1.14	0.000
17.717	1.14	6.69	1.14	0.000
17.733	1.13	6.65	1.13	0.000
17.750	1.12	6.62	1.12	0.000
17.767	1.12	6.58	1.12	0.000
17.783	1.11	6.54	1.11	0.000
17.800	1.11	6.51	1.11	0.000
17.817	1.10	6.47	1.10	0.000
17.833	1.09	6.43	1.09	0.000
17.850	1.09	6.40	1.09	0.000
17.867	1.08	6.37	1.08	0.000
17.883	1.08	6.33	1.08	0.000
17.900	1.07	6.30	1.07	0.000
17.917	1.06	6.27	1.06	0.000
17.933	1.06	6.23	1.06	0.000
17.950	1.05	6.20	1.05	0.000
17.967	1.05	6.17	1.05	0.000
17.983	1.04	6.14	1.04	0.000
18.000	1.04	6.10	1.04	0.000
18.017	1.03	6.05	1.03	0.000
18.033	1.02	5.99	1.02	0.000
18.050	1.01	5.92	1.01	0.000
18.067	0.99	5.84	0.99	0.000
18.083	0.98	5.76	0.98	0.000
18.100	0.97	5.68	0.97	0.000
18.117	0.95	5.59	0.95	0.000
18.133	0.94	5.50	0.94	0.000
18.150	0.92	5.41	0.92	0.000
18.167	0.90	5.32	0.90	0.000
18.183	0.89	5.23	0.89	0.000
18.200	0.87	5.14	0.87	0.000
18.217	0.86	5.05	0.86	0.000
18.233	0.84	4.95	0.84	0.000
18.250	0.83	4.86	0.83	0.000
18.267	0.81	4.77	0.81	0.000
18.283	0.80	4.69	0.80	0.000
18.300	0.78	4.62	0.78	0.000
18.317	0.77	4.56	0.77	0.000
18.333	0.77	4.51	0.77	0.000
18.350	0.76	4.47	0.76	0.000
18.367	0.75	4.43	0.75	0.000
18.383	0.75	4.39	0.75	0.000
18.400	0.74	4.36	0.74	0.000
18.417	0.74	4.34	0.74	0.000
18.433	0.73	4.31	0.73	0.000
18.450	0.73	4.29	0.73	0.000
18.467	0.72	4.26	0.72	0.000
18.483	0.72	4.24	0.72	0.000
18.500	0.72	4.22	0.72	0.000
18.517	0.71	4.20	0.71	0.000
18.533	0.71	4.18	0.71	0.000
18.550	0.71	4.16	0.71	0.000
18.567	0.70	4.14	0.70	0.000
18.583	0.70	4.12	0.70	0.000
18.600	0.70	4.10	0.70	0.000
18.617	0.69	4.09	0.69	0.000
18.633	0.69	4.07	0.69	0.000
18.650	0.69	4.05	0.69	0.000
18.667	0.69	4.03	0.69	0.000
18.683	0.68	4.02	0.68	0.000

18.700	0.68	4.00	0.68	0.000
18.717	0.68	3.98	0.68	0.000
18.733	0.67	3.97	0.67	0.000
18.750	0.67	3.95	0.67	0.000
18.767	0.67	3.93	0.67	0.000
18.783	0.67	3.92	0.67	0.000
18.800	0.66	3.90	0.66	0.000
18.817	0.66	3.89	0.66	0.000
18.833	0.66	3.87	0.66	0.000
18.850	0.66	3.86	0.66	0.000
18.867	0.65	3.84	0.65	0.000
18.883	0.65	3.83	0.65	0.000
18.900	0.65	3.81	0.65	0.000
18.917	0.64	3.80	0.64	0.000
18.933	0.64	3.78	0.64	0.000
18.950	0.64	3.77	0.64	0.000
18.967	0.64	3.75	0.64	0.000
18.983	0.64	3.74	0.64	0.000
19.000	0.63	3.72	0.63	0.000

FLOW PROCESS FROM NODE 208.00 TO NODE 208.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<
=====

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
TOTAL CATCHMENT AREA(ACRES) = 1.50
SOIL-LOSS RATE, Fm,(INCH/HR) = 0.022
LOW LOSS FRACTION = 0.060
TIME OF CONCENTRATION(MIN.) = 10.88
SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
USER SPECIFIED RAINFALL VALUES ARE USED:
RETURN FREQUENCY(YEARS) = 100
5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.56
30-MINUTE POINT RAINFALL VALUE(INCHES) = 1.17
1-HOUR POINT RAINFALL VALUE(INCHES) = 1.56
3-HOUR POINT RAINFALL VALUE(INCHES) = 2.61
6-HOUR POINT RAINFALL VALUE(INCHES) = 3.61
24-HOUR POINT RAINFALL VALUE(INCHES) = 6.05

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 0.65
TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.11

2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)

(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	1.4	2.9	4.3	5.7
14.000	0.2347	0.50	. Q	. V	.	.	.
14.017	0.2354	0.50	. Q	. V	.	.	.
14.033	0.2361	0.51	. Q	. V	.	.	.
14.050	0.2368	0.51	. Q	. V	.	.	.
14.067	0.2375	0.51	. Q	. V	.	.	.
14.083	0.2382	0.51	. Q	. V	.	.	.
14.100	0.2389	0.51	. Q	. V	.	.	.
14.117	0.2396	0.51	. Q	. V	.	.	.
14.133	0.2403	0.52	. Q	. V	.	.	.
14.150	0.2411	0.52	. Q	. V	.	.	.
14.167	0.2418	0.52	. Q	. V	.	.	.
14.183	0.2425	0.52	. Q	. V	.	.	.
14.200	0.2432	0.52	. Q	. V	.	.	.
14.217	0.2439	0.53	. Q	. V	.	.	.
14.233	0.2447	0.53	. Q	. V	.	.	.
14.250	0.2454	0.53	. Q	. V	.	.	.
14.267	0.2461	0.54	. Q	. V	.	.	.
14.283	0.2469	0.54	. Q	. V	.	.	.
14.300	0.2476	0.54	. Q	. V	.	.	.
14.317	0.2484	0.55	. Q	. V	.	.	.
14.333	0.2491	0.55	. Q	. V	.	.	.
14.350	0.2499	0.55	. Q	. V	.	.	.
14.367	0.2507	0.56	. Q	. V	.	.	.
14.383	0.2514	0.56	. Q	. V	.	.	.
14.400	0.2522	0.56	. Q	. V	.	.	.
14.417	0.2530	0.57	. Q	. V	.	.	.
14.433	0.2538	0.57	. Q	. V	.	.	.
14.450	0.2546	0.57	. Q	. V	.	.	.
14.467	0.2554	0.57	. Q	. V	.	.	.
14.483	0.2561	0.57	. Q	. V	.	.	.
14.500	0.2569	0.58	. Q	. V	.	.	.
14.517	0.2577	0.58	. Q	. V	.	.	.
14.533	0.2585	0.58	. Q	. V	.	.	.
14.550	0.2593	0.58	. Q	. V	.	.	.
14.567	0.2601	0.59	. Q	. V	.	.	.
14.583	0.2610	0.59	. Q	. V	.	.	.
14.600	0.2618	0.60	. Q	. V	.	.	.
14.617	0.2626	0.60	. Q	. V	.	.	.
14.633	0.2634	0.61	. Q	. V	.	.	.
14.650	0.2643	0.61	. Q	. V	.	.	.
14.667	0.2651	0.62	. Q	. V	.	.	.
14.683	0.2660	0.62	. Q	. V	.	.	.
14.700	0.2669	0.63	. Q	. V	.	.	.
14.717	0.2677	0.63	. Q	. V	.	.	.
14.733	0.2686	0.64	. Q	. V	.	.	.
14.750	0.2695	0.64	. Q	. V	.	.	.
14.767	0.2704	0.64	. Q	. V	.	.	.
14.783	0.2713	0.65	. Q	. V	.	.	.
14.800	0.2722	0.65	. Q	. V	.	.	.
14.817	0.2731	0.65	. Q	. V	.	.	.

14.833	0.2740	0.66	. Q	. V	.	.	.
14.850	0.2749	0.66	. Q	. V	.	.	.
14.867	0.2758	0.66	. Q	. V	.	.	.
14.883	0.2767	0.66	. Q	. V	.	.	.
14.900	0.2776	0.67	. Q	. V	.	.	.
14.917	0.2785	0.67	. Q	. V	.	.	.
14.933	0.2795	0.68	. Q	. V	.	.	.
14.950	0.2804	0.68	. Q	. V	.	.	.
14.967	0.2814	0.69	. Q	. V	.	.	.
14.983	0.2823	0.70	. Q	. V	.	.	.
15.000	0.2833	0.71	. Q	. V	.	.	.
15.017	0.2843	0.72	. Q	. V	.	.	.
15.033	0.2853	0.72	. Q	. V	.	.	.
15.050	0.2863	0.73	. Q	. V	.	.	.
15.067	0.2873	0.74	. Q	. V	.	.	.
15.083	0.2883	0.75	. Q	. V	.	.	.
15.100	0.2894	0.75	. Q	. V	.	.	.
15.117	0.2904	0.76	. Q	. V	.	.	.
15.133	0.2915	0.76	. Q	. V	.	.	.
15.150	0.2925	0.77	. Q	. V	.	.	.
15.167	0.2936	0.77	. Q	. V	.	.	.
15.183	0.2947	0.78	. Q	. V	.	.	.
15.200	0.2957	0.78	. Q	. V	.	.	.
15.217	0.2968	0.79	. Q	. V	.	.	.
15.233	0.2979	0.79	. Q	. V	.	.	.
15.250	0.2990	0.80	. Q	. V	.	.	.
15.267	0.3001	0.80	. Q	. V	.	.	.
15.283	0.3012	0.81	. Q	. V	.	.	.
15.300	0.3024	0.82	. Q	. V	.	.	.
15.317	0.3035	0.83	. Q	. V	.	.	.
15.333	0.3047	0.83	. Q	. V	.	.	.
15.350	0.3058	0.84	. Q	. V	.	.	.
15.367	0.3070	0.85	. Q	. V	.	.	.
15.383	0.3082	0.86	. Q	. V	.	.	.
15.400	0.3094	0.87	. Q	. V	.	.	.
15.417	0.3106	0.88	. Q	. V	.	.	.
15.433	0.3118	0.89	. Q	. V	.	.	.
15.450	0.3130	0.89	. Q	. V	.	.	.
15.467	0.3143	0.90	. Q	. V	.	.	.
15.483	0.3155	0.91	. Q	. V	.	.	.
15.500	0.3168	0.91	. Q	. V	.	.	.
15.517	0.3180	0.92	. Q	. V	.	.	.
15.533	0.3193	0.92	. Q	. V	.	.	.
15.550	0.3206	0.93	. Q	. V	.	.	.
15.567	0.3219	0.93	. Q	. V	.	.	.
15.583	0.3232	0.94	. Q	. V	.	.	.
15.600	0.3245	0.94	. Q	. V	.	.	.
15.617	0.3258	0.95	. Q	. V	.	.	.
15.633	0.3271	0.95	. Q	. V	.	.	.
15.650	0.3284	0.97	. Q	. V	.	.	.
15.667	0.3298	1.00	. Q	. V	.	.	.
15.683	0.3312	1.04	. Q	. V	.	.	.
15.700	0.3327	1.08	. Q	. V	.	.	.
15.717	0.3342	1.11	. Q	. V	.	.	.
15.733	0.3358	1.15	. Q	. V	.	.	.
15.750	0.3375	1.19	. Q	. V	.	.	.
15.767	0.3392	1.22	. Q	. V	.	.	.
15.783	0.3409	1.26	. Q	. V	.	.	.
15.800	0.3427	1.30	. Q	. V	.	.	.
15.817	0.3445	1.34	. Q	. V	.	.	.
15.833	0.3464	1.38	. Q	. V	.	.	.
15.850	0.3484	1.42	. Q	. V	.	.	.
15.867	0.3504	1.47	. Q	. V	.	.	.
15.883	0.3525	1.52	. Q	. V	.	.	.

15.900	0.3546	1.56	.	Q	.	V	.	.
15.917	0.3568	1.61	.	.Q	.	V	.	.
15.933	0.3591	1.65	.	.Q	.	V	.	.
15.950	0.3615	1.70	.	.Q	.	V	.	.
15.967	0.3639	1.75	.	.Q	.	V	.	.
15.983	0.3663	1.79	.	.Q	.	V	.	.
16.000	0.3689	1.84	.	.Q	.	V	.	.
16.017	0.3717	2.04	.	.Q	.	V	.	.
16.033	0.3750	2.39	.	.Q	.	V	.	.
16.050	0.3788	2.75	.	.	Q.	V	.	.
16.067	0.3830	3.10	.	.	.Q	V	.	.
16.083	0.3878	3.45	.	.	.Q	V	.	.
16.100	0.3930	3.81	.	.	.V	Q	.	.
16.117	0.3988	4.16	.	.	.V	Q.	.	.
16.133	0.4050	4.52	.	.	.V	.Q	.	.
16.150	0.4117	4.87	.	.	.V	.	Q	.
16.167	0.4189	5.22	.	.	.V	.	Q	.
16.183	0.4268	5.71	.	.	.V	.	Q	.
16.200	0.4343	5.45	.	.	.V	.	Q	.
16.217	0.4412	5.03	.	.	.V	.	Q	.
16.233	0.4475	4.60	.	.	.V	.	Q	.
16.250	0.4533	4.18	.	.	.	VQ.	.	.
16.267	0.4585	3.76	.	.	.	Q	V	.
16.283	0.4631	3.34	.	.	Q	V	.	.
16.300	0.4671	2.91	.	.	Q	V	.	.
16.317	0.4705	2.49	.	.	Q	V	.	.
16.333	0.4734	2.07	.	.	Q	V	.	.
16.350	0.4756	1.65	.	.	.Q	V	.	.
16.367	0.4773	1.24	.	.	Q	V	.	.
16.383	0.4788	1.10	.	.	Q	V	.	.
16.400	0.4803	1.08	.	.	Q	V	.	.
16.417	0.4818	1.05	.	.	Q	V	.	.
16.433	0.4832	1.03	.	.	Q	V	.	.
16.450	0.4846	1.01	.	.	Q	V	.	.
16.467	0.4859	0.99	.	.	Q	V	.	.
16.483	0.4873	0.97	.	.	Q	V	.	.
16.500	0.4886	0.94	.	.	Q	V	.	.
16.517	0.4899	0.92	.	.	Q	V	.	.
16.533	0.4911	0.90	.	.	Q	V	.	.
16.550	0.4923	0.88	.	.	Q	V	.	.
16.567	0.4935	0.86	.	.	Q	V	.	.
16.583	0.4947	0.85	.	.	Q	V	.	.
16.600	0.4958	0.83	.	.	Q	V	.	.
16.617	0.4969	0.82	.	.	Q	V	.	.
16.633	0.4980	0.80	.	.	Q	V	.	.
16.650	0.4991	0.79	.	.	Q	V	.	.
16.667	0.5002	0.77	.	.	Q	V	.	.
16.683	0.5012	0.76	.	.	Q	.V	.	.
16.700	0.5022	0.74	.	.	Q	.V	.	.
16.717	0.5032	0.73	.	.	Q	.V	.	.
16.733	0.5042	0.71	.	.	Q	.V	.	.
16.750	0.5052	0.70	.	.	Q	.V	.	.
16.767	0.5061	0.69	.	.	Q	.V	.	.
16.783	0.5071	0.68	.	.	Q	.V	.	.
16.800	0.5080	0.67	.	.	Q	.V	.	.
16.817	0.5089	0.66	.	.	Q	.V	.	.
16.833	0.5098	0.65	.	.	Q	.V	.	.
16.850	0.5107	0.65	.	.	Q	.V	.	.
16.867	0.5116	0.64	.	.	Q	.V	.	.
16.883	0.5124	0.63	.	.	Q	.V	.	.
16.900	0.5133	0.62	.	.	Q	.V	.	.
16.917	0.5141	0.61	.	.	Q	.V	.	.
16.933	0.5150	0.60	.	.	Q	.V	.	.
16.950	0.5158	0.60	.	.	Q	.V	.	.

16.967	0.5166	0.59	.	Q	.	.	.	.V	.
16.983	0.5174	0.58	.	Q	.	.	.	.V	.
17.000	0.5182	0.58	.	Q	.	.	.	.V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	765.0
20%	195.0
30%	115.0
40%	90.0
50%	75.0
60%	60.0
70%	45.0
80%	30.0
90%	15.0

 FLOW PROCESS FROM NODE 228.00 TO NODE 228.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

 STREAM HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	7.5	15.0	22.5	30.0
15.800	1.2382	4.85	.	Q	.	V	.
15.817	1.2451	5.05	.	Q	.	V	.
15.833	1.2524	5.24	.	Q	.	V	.
15.850	1.2599	5.45	.	Q	.	V	.
15.867	1.2676	5.65	.	Q	.	V	.
15.883	1.2757	5.87	.	Q	.	.V	.
15.900	1.2841	6.10	.	Q	.	.V	.
15.917	1.2929	6.35	.	Q	.	.V	.
15.933	1.3019	6.59	.	Q	.	.V	.
15.950	1.3114	6.84	.	Q	.	.V	.
15.967	1.3211	7.08	.	Q	.	.V	.
15.983	1.3312	7.33	.	Q	.	.V	.
16.000	1.3416	7.57	.	Q	.	.V	.
16.017	1.3529	8.19	.	Q	.	.V	.
16.033	1.3660	9.48	.	.Q	.	.V	.
16.050	1.3814	11.17	.	.Q	.	.V	.
16.067	1.3992	12.97	.	.	Q	.V	.
16.083	1.4196	14.76	.	.	Q.	V	.
16.100	1.4423	16.51	.	.	.	QV	.
16.117	1.4673	18.15	.	.	.	.Q	.
16.133	1.4946	19.79	.	.	.	.V	Q
16.150	1.5242	21.51	.	.	.	.V	Q
16.167	1.5552	22.48	.	.	.	.V	Q
16.183	1.5860	22.41	.	.	.	.V	Q
16.200	1.6149	20.96	.	.	.	.V	Q
16.217	1.6411	19.02	.	.	.	.Q	V
16.233	1.6641	16.69	.	.	.	.Q	V
16.250	1.6836	14.15	.	.	.	.Q	V

16.267	1.6997	11.72	.	.	Q	.	V	.
16.283	1.7127	9.42	.	.	Q	.	V	.
16.300	1.7230	7.48	.	.	Q.	.	V	.
16.317	1.7316	6.24	.	.	Q	.	V	.
16.333	1.7391	5.46	.	.	Q	.	V	.
16.350	1.7458	4.84	.	.	Q	.	V	.
16.367	1.7517	4.28	.	.	Q	.	V	.
16.383	1.7572	4.02	.	.	Q	.	V	.
16.400	1.7626	3.92	.	.	Q	.	V	.
16.417	1.7679	3.84	.	.	Q	.	V	.
16.433	1.7731	3.74	.	.	Q	.	V	.
16.450	1.7781	3.64	.	.	Q	.	V	.
16.467	1.7830	3.55	.	.	Q	.	V	.
16.483	1.7878	3.47	.	.	Q	.	V	.
16.500	1.7924	3.40	.	.	Q	.	V	.
16.517	1.7970	3.34	.	.	Q	.	V	.
16.533	1.8016	3.28	.	.	Q	.	V	.
16.550	1.8060	3.22	.	.	Q	.	V	.
16.567	1.8104	3.18	.	.	Q	.	V	.
16.583	1.8147	3.13	.	.	Q	.	V	.
16.600	1.8189	3.08	.	.	Q	.	V	.
16.617	1.8231	3.04	.	.	Q	.	V	.
16.633	1.8272	2.99	.	.	Q	.	V	.
16.650	1.8313	2.94	.	.	Q	.	V	.
16.667	1.8353	2.89	.	.	Q	.	V	.
16.683	1.8392	2.84	.	.	Q	.	V	.
16.700	1.8430	2.79	.	.	Q	.	V	.
16.717	1.8468	2.74	.	.	Q	.	V	.
16.733	1.8505	2.70	.	.	Q	.	V	.
16.750	1.8542	2.65	.	.	Q	.	V	.
16.767	1.8578	2.62	.	.	Q	.	V	.
16.783	1.8613	2.58	.	.	Q	.	V	.
16.800	1.8648	2.54	.	.	Q	.	V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1009.0
10%	690.0
20%	175.0
30%	110.0
40%	80.0
50%	65.0
60%	55.0
70%	45.0
80%	35.0
90%	20.0

END OF FLOODSCx ROUTING ANALYSIS

FLOOD ROUTING ANALYSIS
 USING COUNTY HYDROLOGY MANUAL OF ORANGE(1986)
 (c) Copyright 1989-2011 Advanced Engineering Software (aes)
 Ver. 18.0 Release Date: 05/01/2011 License ID 1264

Analysis prepared by:

***** DESCRIPTION OF STUDY *****

- * THE VILLAGE - TTM 17439 *
- * 25-YR PROPOSED CONDITION - LINE N COMPLEX CALIB FD *
- * MCHANDOO *

FILE NAME: PROP25N.DAT
 TIME/DATE OF STUDY: 17:19 01/09/2013

The Small Area Unit Hydrograph Procedures in Section J of the Hydrology Manual provides estimates of runoff hydrograph and runoff volume for watersheds whose time of concentration is less than 25 minutes. The PROGRAM User should check the applicability of using the small area unit hydrograph procedures, and follow the guidelines in Sections J and K.5 in complex watershed modeling.

 FLOW PROCESS FROM NODE 202.00 TO NODE 207.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<

(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
 TOTAL CATCHMENT AREA(ACRES) = 4.30
 SOIL-LOSS RATE, Fm, (INCH/HR) = 0.068
 LOW LOSS FRACTION = 0.213
 TIME OF CONCENTRATION(MIN.) = 8.65
 SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
 USER SPECIFIED RAINFALL VALUES ARE USED:
 RETURN FREQUENCY(YEARS) = 25
 5-MINUTE POINT RAINFALL VALUE(INCHES) = 0.43
 30-MINUTE POINT RAINFALL VALUE(INCHES) = 0.94
 1-HOUR POINT RAINFALL VALUE(INCHES) = 1.24
 3-HOUR POINT RAINFALL VALUE(INCHES) = 2.09
 6-HOUR POINT RAINFALL VALUE(INCHES) = 2.91
 24-HOUR POINT RAINFALL VALUE(INCHES) = 4.83

 TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 1.29
 TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.44

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24 - HOUR STORM
 RUNOFF HYDROGRAPH

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HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	3.6	7.2	10.8	14.4
14.000	0.4514	0.99	. Q	. V	.	.	.
14.017	0.4527	0.99	. Q	. V	.	.	.
14.033	0.4541	1.00	. Q	. V	.	.	.
14.050	0.4555	1.00	. Q	. V	.	.	.
14.067	0.4569	1.01	. Q	. V	.	.	.
14.083	0.4583	1.01	. Q	. V	.	.	.
14.100	0.4597	1.02	. Q	. V	.	.	.
14.117	0.4611	1.03	. Q	. V	.	.	.
14.133	0.4625	1.03	. Q	. V	.	.	.
14.150	0.4639	1.04	. Q	. V	.	.	.
14.167	0.4654	1.04	. Q	. V	.	.	.
14.183	0.4668	1.04	. Q	. V	.	.	.
14.200	0.4682	1.05	. Q	. V	.	.	.
14.217	0.4697	1.05	. Q	. V	.	.	.
14.233	0.4711	1.05	. Q	. V	.	.	.
14.250	0.4726	1.06	. Q	. V	.	.	.
14.267	0.4741	1.06	. Q	. V	.	.	.
14.283	0.4755	1.07	. Q	. V	.	.	.
14.300	0.4770	1.07	. Q	. V	.	.	.
14.317	0.4785	1.08	. Q	. V	.	.	.
14.333	0.4800	1.09	. Q	. V	.	.	.
14.350	0.4815	1.10	. Q	. V	.	.	.
14.367	0.4831	1.11	. Q	. V	.	.	.
14.383	0.4846	1.12	. Q	. V	.	.	.
14.400	0.4862	1.13	. Q	. V	.	.	.
14.417	0.4877	1.14	. Q	. V	.	.	.
14.433	0.4893	1.14	. Q	. V	.	.	.
14.450	0.4909	1.15	. Q	. V	.	.	.
14.467	0.4925	1.15	. Q	. V	.	.	.
14.483	0.4941	1.16	. Q	. V	.	.	.
14.500	0.4957	1.16	. Q	. V	.	.	.
14.517	0.4973	1.17	. Q	. V	.	.	.
14.533	0.4989	1.17	. Q	. V	.	.	.
14.550	0.5005	1.18	. Q	. V	.	.	.
14.567	0.5022	1.19	. Q	. V	.	.	.
14.583	0.5038	1.20	. Q	. V	.	.	.
14.600	0.5055	1.21	. Q	. V	.	.	.
14.617	0.5071	1.22	. Q	. V	.	.	.
14.633	0.5088	1.23	. Q	. V	.	.	.
14.650	0.5106	1.24	. Q	. V	.	.	.
14.667	0.5123	1.25	. Q	. V	.	.	.
14.683	0.5140	1.27	. Q	. V	.	.	.
14.700	0.5158	1.28	. Q	. V	.	.	.
14.717	0.5176	1.29	. Q	. V	.	.	.
14.733	0.5193	1.30	. Q	. V	.	.	.
14.750	0.5211	1.30	. Q	. V	.	.	.
14.767	0.5229	1.31	. Q	. V	.	.	.
14.783	0.5248	1.32	. Q	. V	.	.	.
14.800	0.5266	1.32	. Q	. V	.	.	.
14.817	0.5284	1.33	. Q	. V	.	.	.

14.833	0.5302	1.34	.	Q	.	V	.	.	.
14.850	0.5321	1.34	.	Q	.	V	.	.	.
14.867	0.5340	1.36	.	Q	.	V	.	.	.
14.883	0.5359	1.37	.	Q	.	V	.	.	.
14.900	0.5378	1.39	.	Q	.	V	.	.	.
14.917	0.5397	1.41	.	Q	.	V	.	.	.
14.933	0.5417	1.42	.	Q	.	V	.	.	.
14.950	0.5436	1.44	.	Q	.	V	.	.	.
14.967	0.5456	1.45	.	Q	.	V	.	.	.
14.983	0.5477	1.47	.	Q	.	V	.	.	.
15.000	0.5497	1.49	.	Q	.	V	.	.	.
15.017	0.5518	1.50	.	Q	.	V	.	.	.
15.033	0.5539	1.51	.	Q	.	V	.	.	.
15.050	0.5559	1.52	.	Q	.	V	.	.	.
15.067	0.5580	1.53	.	Q	.	V	.	.	.
15.083	0.5602	1.54	.	Q	.	V	.	.	.
15.100	0.5623	1.55	.	Q	.	V	.	.	.
15.117	0.5644	1.56	.	Q	.	V	.	.	.
15.133	0.5666	1.57	.	Q	.	V	.	.	.
15.150	0.5688	1.58	.	Q	.	V	.	.	.
15.167	0.5710	1.61	.	Q	.	V	.	.	.
15.183	0.5732	1.63	.	Q	.	V	.	.	.
15.200	0.5755	1.66	.	Q	.	V	.	.	.
15.217	0.5778	1.68	.	Q	.	V	.	.	.
15.233	0.5802	1.71	.	Q	.	V	.	.	.
15.250	0.5826	1.73	.	Q	.	V	.	.	.
15.267	0.5850	1.76	.	Q	.	V	.	.	.
15.283	0.5874	1.78	.	Q	.	V	.	.	.
15.300	0.5899	1.80	.	Q	.	V	.	.	.
15.317	0.5924	1.81	.	Q	.	V	.	.	.
15.333	0.5949	1.83	.	Q	.	V	.	.	.
15.350	0.5975	1.85	.	Q	.	V	.	.	.
15.367	0.6000	1.86	.	Q	.	V	.	.	.
15.383	0.6026	1.88	.	Q	.	V	.	.	.
15.400	0.6052	1.89	.	Q	.	V	.	.	.
15.417	0.6079	1.91	.	Q	.	V	.	.	.
15.433	0.6105	1.92	.	Q	.	V	.	.	.
15.450	0.6132	1.93	.	Q	.	V	.	.	.
15.467	0.6158	1.93	.	Q	.	V	.	.	.
15.483	0.6185	1.94	.	Q	.	V	.	.	.
15.500	0.6212	1.94	.	Q	.	V	.	.	.
15.517	0.6238	1.94	.	Q	.	V	.	.	.
15.533	0.6265	1.94	.	Q	.	V	.	.	.
15.550	0.6292	1.95	.	Q	.	V	.	.	.
15.567	0.6319	1.95	.	Q	.	V	.	.	.
15.583	0.6346	1.97	.	Q	.	V	.	.	.
15.600	0.6374	2.00	.	Q	.	V	.	.	.
15.617	0.6402	2.03	.	Q	.	V	.	.	.
15.633	0.6430	2.07	.	Q	.	V	.	.	.
15.650	0.6459	2.10	.	Q	.	V	.	.	.
15.667	0.6488	2.13	.	Q	.	V	.	.	.
15.683	0.6518	2.16	.	Q	.	V	.	.	.
15.700	0.6548	2.20	.	Q	.	V	.	.	.
15.717	0.6579	2.23	.	Q	.	V	.	.	.
15.733	0.6612	2.36	.	Q	.	V	.	.	.
15.750	0.6646	2.51	.	Q	.	V	.	.	.
15.767	0.6683	2.66	.	Q	.	V	.	.	.
15.783	0.6721	2.81	.	Q	.	V	.	.	.
15.800	0.6762	2.96	.	Q	.	V	.	.	.
15.817	0.6805	3.11	.	Q	.	V	.	.	.
15.833	0.6850	3.26	.	Q	.	V	.	.	.
15.850	0.6897	3.41	.	Q	.	V	.	.	.
15.867	0.6946	3.56	.	Q	.	V	.	.	.
15.883	0.6997	3.71	.	Q	.	V	.	.	.

15.900	0.7050	3.87	.	Q	.	V	.	.	.
15.917	0.7106	4.02	.	Q	.	V	.	.	.
15.933	0.7163	4.18	.	Q	.	V	.	.	.
15.950	0.7223	4.33	.	Q	.	V	.	.	.
15.967	0.7284	4.48	.	Q	.	V	.	.	.
15.983	0.7348	4.64	.	Q	.	V	.	.	.
16.000	0.7414	4.79	.	Q	.	V	.	.	.
16.017	0.7489	5.42	.	Q	.	V	.	.	.
16.033	0.7579	6.52	.	Q	.	V	.	.	.
16.050	0.7684	7.62	.	Q	.	V	.	.	.
16.067	0.7804	8.72	.	Q	.	V	.	.	.
16.083	0.7939	9.81	.	Q	.	V	.	.	.
16.100	0.8089	10.91	.	Q	.	V	.	.	.
16.117	0.8255	12.01	.	Q	.	V	.	.	.
16.133	0.8435	13.11	.	Q	.	V	.	.	.
16.150	0.8633	14.38	.	Q	.	V	.	.	.
16.167	0.8815	13.23	.	Q	.	V	.	.	.
16.183	0.8979	11.89	.	Q	.	V	.	.	.
16.200	0.9124	10.55	.	Q	.	V	.	.	.
16.217	0.9251	9.20	.	Q	.	V	.	.	.
16.233	0.9359	7.86	.	Q	.	V	.	.	.
16.250	0.9449	6.51	.	Q	.	V	.	.	.
16.267	0.9520	5.17	.	Q	.	V	.	.	.
16.283	0.9573	3.83	.	Q	.	V	.	.	.
16.300	0.9611	2.78	.	Q	.	V	.	.	.
16.317	0.9647	2.61	.	Q	.	V	.	.	.
16.333	0.9682	2.50	.	Q	.	V	.	.	.
16.350	0.9715	2.39	.	Q	.	V	.	.	.
16.367	0.9746	2.27	.	Q	.	V	.	.	.
16.383	0.9776	2.16	.	Q	.	V	.	.	.
16.400	0.9804	2.04	.	Q	.	V	.	.	.
16.417	0.9830	1.93	.	Q	.	V	.	.	.
16.433	0.9855	1.81	.	Q	.	V	.	.	.
16.450	0.9880	1.76	.	Q	.	V	.	.	.
16.467	0.9904	1.75	.	Q	.	V	.	.	.
16.483	0.9928	1.74	.	Q	.	V	.	.	.
16.500	0.9951	1.73	.	Q	.	V	.	.	.
16.517	0.9975	1.71	.	Q	.	V	.	.	.
16.533	0.9998	1.70	.	Q	.	V	.	.	.
16.550	1.0022	1.69	.	Q	.	V	.	.	.
16.567	1.0045	1.68	.	Q	.	V	.	.	.
16.583	1.0068	1.67	.	Q	.	V	.	.	.
16.600	1.0091	1.64	.	Q	.	V	.	.	.
16.617	1.0113	1.61	.	Q	.	V	.	.	.
16.633	1.0135	1.58	.	Q	.	V	.	.	.
16.650	1.0156	1.55	.	Q	.	V	.	.	.
16.667	1.0177	1.52	.	Q	.	V	.	.	.
16.683	1.0197	1.49	.	Q	.	V	.	.	.
16.700	1.0218	1.46	.	Q	.	V	.	.	.
16.717	1.0237	1.43	.	Q	.	V	.	.	.
16.733	1.0257	1.41	.	Q	.	V	.	.	.
16.750	1.0276	1.39	.	Q	.	V	.	.	.
16.767	1.0295	1.36	.	Q	.	V	.	.	.
16.783	1.0313	1.34	.	Q	.	V	.	.	.
16.800	1.0331	1.32	.	Q	.	V	.	.	.
16.817	1.0349	1.30	.	Q	.	V	.	.	.
16.833	1.0367	1.28	.	Q	.	V	.	.	.
16.850	1.0384	1.26	.	Q	.	V	.	.	.
16.867	1.0401	1.24	.	Q	.	V	.	.	.
16.883	1.0418	1.22	.	Q	.	V	.	.	.
16.900	1.0435	1.21	.	Q	.	V	.	.	.
16.917	1.0451	1.19	.	Q	.	V	.	.	.
16.933	1.0468	1.18	.	Q	.	V	.	.	.
16.950	1.0484	1.16	.	Q	.	V	.	.	.

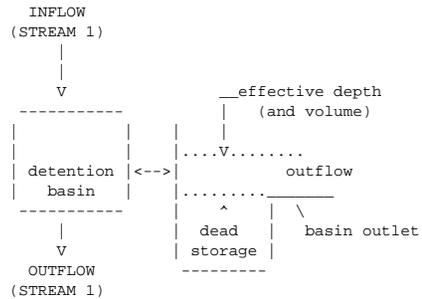
16.967	1.0499	1.15	. Q	.	.	. V	.
16.983	1.0515	1.13	. Q	.	.	. V	.
17.000	1.0530	1.12	. Q	.	.	. V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	530.0
20%	150.0
30%	100.0
40%	70.0
50%	60.0
60%	50.0
70%	35.0
80%	25.0
90%	15.0

 FLOW PROCESS FROM NODE 207.00 TO NODE 207.00 IS CODE = 3.2

>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #1<<<<<



ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 1 THROUGH A FLOW-THROUGH DETENTION BASIN

SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:

DEAD STORAGE(AF) = 0.000
 SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
 SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
 DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	0.50	0.01	0.009
3	2.00	0.02	0.036
4	2.75	2.89	0.051

5	3.25	10.11	0.060
6	3.50	13.00	0.064
7	3.75	15.50	0.069
8	4.00	17.40	0.073

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MODIFIED-PULS BASIN ROUTING MODEL RESULTS(1-MINUTE COMPUTATION INTERVALS):
 (Note: Computed EFFECTIVE DEPTH and VOLUME are estimated at the clock time; MEAN OUTFLOW is the average value during the unit interval.)

CLOCK TIME (HRS)	DEAD-STORAGE FILLED(AF)	INFLOW (CFS)	LOSS (CFS)	EFFECTIVE DEPTH(FT)	MEAN OUTFLOW (CFS)	EFFECTIVE VOLUME(AF)
15.017	0.000	1.50	0.00	2.37	1.4	0.043
15.033	0.000	1.51	0.00	2.38	1.5	0.044
15.050	0.000	1.52	0.00	2.38	1.5	0.044
15.067	0.000	1.53	0.00	2.38	1.5	0.044
15.083	0.000	1.54	0.00	2.39	1.5	0.044
15.100	0.000	1.55	0.00	2.39	1.5	0.044
15.117	0.000	1.56	0.00	2.39	1.5	0.044
15.133	0.000	1.57	0.00	2.39	1.5	0.044
15.150	0.000	1.58	0.00	2.40	1.5	0.044
15.167	0.000	1.61	0.00	2.40	1.5	0.044
15.183	0.000	1.63	0.00	2.41	1.6	0.044
15.200	0.000	1.66	0.00	2.41	1.6	0.044
15.217	0.000	1.68	0.00	2.42	1.6	0.044
15.233	0.000	1.71	0.00	2.42	1.6	0.044
15.250	0.000	1.73	0.00	2.43	1.6	0.045
15.267	0.000	1.76	0.00	2.43	1.7	0.045
15.283	0.000	1.78	0.00	2.44	1.7	0.045
15.300	0.000	1.80	0.00	2.45	1.7	0.045
15.317	0.000	1.81	0.00	2.45	1.7	0.045
15.333	0.000	1.83	0.00	2.46	1.8	0.045
15.350	0.000	1.85	0.00	2.46	1.8	0.045
15.367	0.000	1.86	0.00	2.47	1.8	0.045
15.383	0.000	1.88	0.00	2.47	1.8	0.045
15.400	0.000	1.89	0.00	2.47	1.8	0.045
15.417	0.000	1.91	0.00	2.48	1.8	0.046
15.433	0.000	1.92	0.00	2.48	1.9	0.046
15.450	0.000	1.93	0.00	2.49	1.9	0.046
15.467	0.000	1.93	0.00	2.49	1.9	0.046
15.483	0.000	1.94	0.00	2.49	1.9	0.046
15.500	0.000	1.94	0.00	2.49	1.9	0.046
15.517	0.000	1.94	0.00	2.50	1.9	0.046
15.533	0.000	1.94	0.00	2.50	1.9	0.046
15.550	0.000	1.95	0.00	2.50	1.9	0.046
15.567	0.000	1.95	0.00	2.50	1.9	0.046
15.583	0.000	1.97	0.00	2.50	1.9	0.046
15.600	0.000	2.00	0.00	2.51	1.9	0.046
15.617	0.000	2.03	0.00	2.51	2.0	0.046
15.633	0.000	2.07	0.00	2.52	2.0	0.046
15.650	0.000	2.10	0.00	2.52	2.0	0.046
15.667	0.000	2.13	0.00	2.53	2.0	0.047
15.683	0.000	2.16	0.00	2.54	2.1	0.047
15.700	0.000	2.20	0.00	2.54	2.1	0.047
15.717	0.000	2.23	0.00	2.55	2.1	0.047
15.733	0.000	2.36	0.00	2.57	2.2	0.047
15.750	0.000	2.51	0.00	2.59	2.2	0.048
15.767	0.000	2.66	0.00	2.61	2.3	0.048
15.783	0.000	2.81	0.00	2.64	2.4	0.049
15.800	0.000	2.96	0.00	2.67	2.5	0.049
15.817	0.000	3.11	0.00	2.70	2.6	0.050

15.833	0.000	3.26	0.00	2.73	2.8	0.051
15.850	0.000	3.41	0.00	2.77	3.0	0.051
15.867	0.000	3.56	0.00	2.79	3.3	0.052
15.883	0.000	3.71	0.00	2.80	3.5	0.052
15.900	0.000	3.87	0.00	2.81	3.7	0.052
15.917	0.000	4.02	0.00	2.82	3.9	0.052
15.933	0.000	4.18	0.00	2.83	4.0	0.053
15.950	0.000	4.33	0.00	2.85	4.2	0.053
15.967	0.000	4.48	0.00	2.86	4.3	0.053
15.983	0.000	4.64	0.00	2.87	4.5	0.053
16.000	0.000	4.79	0.00	2.88	4.7	0.053
16.017	0.000	5.42	0.00	2.91	5.0	0.054
16.033	0.000	6.52	0.00	2.98	5.7	0.055
16.050	0.000	7.62	0.00	3.05	6.7	0.056
16.067	0.000	8.72	0.00	3.12	7.7	0.058
16.083	0.000	9.81	0.00	3.20	8.8	0.059
16.100	0.000	10.91	0.00	3.28	9.9	0.060
16.117	0.000	12.01	0.00	3.37	11.0	0.062
16.133	0.000	13.11	0.00	3.46	12.0	0.063
16.150	0.000	14.38	0.00	3.56	13.1	0.065
16.167	0.000	13.23	0.00	3.54	13.5	0.065
16.183	0.000	11.89	0.00	3.46	13.0	0.063
16.200	0.000	10.55	0.00	3.34	11.9	0.062
16.217	0.000	9.20	0.00	3.23	10.5	0.060
16.233	0.000	7.86	0.00	3.13	9.1	0.058
16.250	0.000	6.51	0.00	3.04	7.8	0.056
16.267	0.000	5.17	0.00	2.95	6.4	0.055
16.283	0.000	3.83	0.00	2.85	5.0	0.053
16.300	0.000	2.78	0.00	2.77	3.8	0.051
16.317	0.000	2.61	0.00	2.74	3.0	0.051
16.333	0.000	2.50	0.00	2.72	2.8	0.050
16.350	0.000	2.39	0.00	2.70	2.7	0.050
16.367	0.000	2.27	0.00	2.67	2.6	0.049
16.383	0.000	2.16	0.00	2.64	2.5	0.049
16.400	0.000	2.04	0.00	2.62	2.4	0.048
16.417	0.000	1.93	0.00	2.59	2.3	0.048
16.433	0.000	1.81	0.00	2.56	2.2	0.047
16.450	0.000	1.76	0.00	2.54	2.1	0.047
16.467	0.000	1.75	0.00	2.52	2.0	0.046
16.483	0.000	1.74	0.00	2.50	2.0	0.046
16.500	0.000	1.73	0.00	2.49	1.9	0.046
16.517	0.000	1.71	0.00	2.48	1.9	0.046
16.533	0.000	1.70	0.00	2.47	1.8	0.045
16.550	0.000	1.69	0.00	2.46	1.8	0.045
16.567	0.000	1.68	0.00	2.45	1.8	0.045
16.583	0.000	1.67	0.00	2.45	1.8	0.045
16.600	0.000	1.64	0.00	2.44	1.7	0.045
16.617	0.000	1.61	0.00	2.44	1.7	0.045
16.633	0.000	1.58	0.00	2.43	1.7	0.045
16.650	0.000	1.55	0.00	2.42	1.7	0.044
16.667	0.000	1.52	0.00	2.42	1.6	0.044
16.683	0.000	1.49	0.00	2.41	1.6	0.044
16.700	0.000	1.46	0.00	2.40	1.6	0.044
16.717	0.000	1.43	0.00	2.39	1.5	0.044
16.733	0.000	1.41	0.00	2.39	1.5	0.044
16.750	0.000	1.39	0.00	2.38	1.5	0.044
16.767	0.000	1.36	0.00	2.37	1.5	0.043
16.783	0.000	1.34	0.00	2.37	1.4	0.043
16.800	0.000	1.32	0.00	2.36	1.4	0.043
16.817	0.000	1.30	0.00	2.35	1.4	0.043
16.833	0.000	1.28	0.00	2.35	1.4	0.043
16.850	0.000	1.26	0.00	2.34	1.3	0.043
16.867	0.000	1.24	0.00	2.34	1.3	0.043
16.883	0.000	1.22	0.00	2.33	1.3	0.043

16.900	0.000	1.21	0.00	2.33	1.3	0.043
16.917	0.000	1.19	0.00	2.32	1.3	0.042
16.933	0.000	1.18	0.00	2.32	1.2	0.042
16.950	0.000	1.16	0.00	2.31	1.2	0.042
16.967	0.000	1.15	0.00	2.31	1.2	0.042
16.983	0.000	1.13	0.00	2.30	1.2	0.042
17.000	0.000	1.12	0.00	2.30	1.2	0.042
17.017	0.000	1.10	0.00	2.30	1.2	0.042
17.033	0.000	1.09	0.00	2.29	1.1	0.042
17.050	0.000	1.08	0.00	2.29	1.1	0.042
17.067	0.000	1.07	0.00	2.29	1.1	0.042
17.083	0.000	1.06	0.00	2.28	1.1	0.042
17.100	0.000	1.05	0.00	2.28	1.1	0.042
17.117	0.000	1.04	0.00	2.28	1.1	0.042
17.133	0.000	1.03	0.00	2.27	1.1	0.041
17.150	0.000	1.02	0.00	2.27	1.1	0.041
17.167	0.000	1.01	0.00	2.27	1.0	0.041
17.183	0.000	1.00	0.00	2.26	1.0	0.041
17.200	0.000	0.99	0.00	2.26	1.0	0.041
17.217	0.000	0.98	0.00	2.26	1.0	0.041
17.233	0.000	0.97	0.00	2.26	1.0	0.041
17.250	0.000	0.97	0.00	2.25	1.0	0.041
17.267	0.000	0.96	0.00	2.25	1.0	0.041
17.283	0.000	0.95	0.00	2.25	1.0	0.041
17.300	0.000	0.94	0.00	2.25	1.0	0.041
17.317	0.000	0.93	0.00	2.25	1.0	0.041
17.333	0.000	0.93	0.00	2.24	1.0	0.041
17.350	0.000	0.92	0.00	2.24	0.9	0.041
17.367	0.000	0.91	0.00	2.24	0.9	0.041
17.383	0.000	0.91	0.00	2.24	0.9	0.041
17.400	0.000	0.90	0.00	2.24	0.9	0.041
17.417	0.000	0.90	0.00	2.23	0.9	0.041
17.433	0.000	0.89	0.00	2.23	0.9	0.041
17.450	0.000	0.88	0.00	2.23	0.9	0.041
17.467	0.000	0.88	0.00	2.23	0.9	0.041
17.483	0.000	0.87	0.00	2.23	0.9	0.041
17.500	0.000	0.87	0.00	2.23	0.9	0.041
17.517	0.000	0.86	0.00	2.22	0.9	0.040
17.533	0.000	0.86	0.00	2.22	0.9	0.040
17.550	0.000	0.85	0.00	2.22	0.9	0.040
17.567	0.000	0.85	0.00	2.22	0.9	0.040
17.583	0.000	0.84	0.00	2.22	0.9	0.040
17.600	0.000	0.84	0.00	2.22	0.9	0.040
17.617	0.000	0.83	0.00	2.22	0.9	0.040
17.633	0.000	0.83	0.00	2.21	0.8	0.040
17.650	0.000	0.82	0.00	2.21	0.8	0.040
17.667	0.000	0.82	0.00	2.21	0.8	0.040
17.683	0.000	0.81	0.00	2.21	0.8	0.040
17.700	0.000	0.81	0.00	2.21	0.8	0.040
17.717	0.000	0.80	0.00	2.21	0.8	0.040
17.733	0.000	0.80	0.00	2.21	0.8	0.040
17.750	0.000	0.79	0.00	2.21	0.8	0.040
17.767	0.000	0.79	0.00	2.20	0.8	0.040
17.783	0.000	0.79	0.00	2.20	0.8	0.040
17.800	0.000	0.78	0.00	2.20	0.8	0.040
17.817	0.000	0.78	0.00	2.20	0.8	0.040
17.833	0.000	0.77	0.00	2.20	0.8	0.040
17.850	0.000	0.77	0.00	2.20	0.8	0.040
17.867	0.000	0.77	0.00	2.20	0.8	0.040
17.883	0.000	0.76	0.00	2.20	0.8	0.040
17.900	0.000	0.76	0.00	2.20	0.8	0.040
17.917	0.000	0.76	0.00	2.20	0.8	0.040
17.933	0.000	0.75	0.00	2.19	0.8	0.040
17.950	0.000	0.75	0.00	2.19	0.8	0.040

17.967	0.000	0.74	0.00	2.19	0.8	0.040
17.983	0.000	0.74	0.00	2.19	0.8	0.040
18.000	0.000	0.74	0.00	2.19	0.8	0.040
18.017	0.000	0.73	0.00	2.19	0.7	0.040
18.033	0.000	0.72	0.00	2.19	0.7	0.040
18.050	0.000	0.70	0.00	2.19	0.7	0.040
18.067	0.000	0.68	0.00	2.18	0.7	0.040
18.083	0.000	0.65	0.00	2.18	0.7	0.040
18.100	0.000	0.63	0.00	2.17	0.7	0.039
18.117	0.000	0.61	0.00	2.17	0.7	0.039
18.133	0.000	0.58	0.00	2.16	0.7	0.039
18.150	0.000	0.56	0.00	2.16	0.6	0.039
18.167	0.000	0.54	0.00	2.15	0.6	0.039
18.183	0.000	0.53	0.00	2.15	0.6	0.039
18.200	0.000	0.53	0.00	2.14	0.6	0.039
18.217	0.000	0.52	0.00	2.14	0.6	0.039
18.233	0.000	0.52	0.00	2.14	0.6	0.039
18.250	0.000	0.52	0.00	2.14	0.5	0.039
18.267	0.000	0.52	0.00	2.14	0.5	0.039
18.283	0.000	0.51	0.00	2.13	0.5	0.039
18.300	0.000	0.51	0.00	2.13	0.5	0.039
18.317	0.000	0.51	0.00	2.13	0.5	0.039
18.333	0.000	0.51	0.00	2.13	0.5	0.039
18.350	0.000	0.50	0.00	2.13	0.5	0.039
18.367	0.000	0.50	0.00	2.13	0.5	0.039
18.383	0.000	0.50	0.00	2.13	0.5	0.039
18.400	0.000	0.50	0.00	2.13	0.5	0.039
18.417	0.000	0.49	0.00	2.13	0.5	0.039
18.433	0.000	0.49	0.00	2.13	0.5	0.039
18.450	0.000	0.49	0.00	2.12	0.5	0.038
18.467	0.000	0.49	0.00	2.12	0.5	0.038
18.483	0.000	0.49	0.00	2.12	0.5	0.038
18.500	0.000	0.48	0.00	2.12	0.5	0.038
18.517	0.000	0.48	0.00	2.12	0.5	0.038
18.533	0.000	0.48	0.00	2.12	0.5	0.038
18.550	0.000	0.48	0.00	2.12	0.5	0.038
18.567	0.000	0.48	0.00	2.12	0.5	0.038
18.583	0.000	0.47	0.00	2.12	0.5	0.038
18.600	0.000	0.47	0.00	2.12	0.5	0.038
18.617	0.000	0.47	0.00	2.12	0.5	0.038
18.633	0.000	0.47	0.00	2.12	0.5	0.038
18.650	0.000	0.47	0.00	2.12	0.5	0.038
18.667	0.000	0.46	0.00	2.12	0.5	0.038
18.683	0.000	0.46	0.00	2.12	0.5	0.038
18.700	0.000	0.46	0.00	2.12	0.5	0.038
18.717	0.000	0.46	0.00	2.12	0.5	0.038
18.733	0.000	0.46	0.00	2.12	0.5	0.038
18.750	0.000	0.45	0.00	2.11	0.5	0.038
18.767	0.000	0.45	0.00	2.11	0.5	0.038
18.783	0.000	0.45	0.00	2.11	0.5	0.038
18.800	0.000	0.45	0.00	2.11	0.5	0.038
18.817	0.000	0.45	0.00	2.11	0.5	0.038
18.833	0.000	0.44	0.00	2.11	0.5	0.038
18.850	0.000	0.44	0.00	2.11	0.4	0.038
18.867	0.000	0.44	0.00	2.11	0.4	0.038
18.883	0.000	0.44	0.00	2.11	0.4	0.038
18.900	0.000	0.44	0.00	2.11	0.4	0.038
18.917	0.000	0.44	0.00	2.11	0.4	0.038
18.933	0.000	0.43	0.00	2.11	0.4	0.038
18.950	0.000	0.43	0.00	2.11	0.4	0.038
18.967	0.000	0.43	0.00	2.11	0.4	0.038
18.983	0.000	0.43	0.00	2.11	0.4	0.038
19.000	0.000	0.43	0.00	2.11	0.4	0.038

PROCESS SUMMARY OF STORAGE:

INFLOW VOLUME = 1.294 AF
 BASIN STORAGE = 0.000 AF (WITH 0.000 AF INITIALLY FILLED)
 OUTFLOW VOLUME = 1.294 AF
 LOSS VOLUME = 0.000 AF

 FLOW PROCESS FROM NODE 207.00 TO NODE 208.00 IS CODE = 4

>>>>MODEL PIPEFLOW ROUTING OF STREAM #1<<<<
 =====

MODEL PIPEFLOW ROUTING OF STREAM 1 WHERE
 STORAGE EFFECTS ARE NEGLECTED WITHIN THE PIPE, FLOW
 VELOCITIES ARE ESTIMATED BY ASSUMING STEADY FLOW FOR
 EACH UNIT INTERVAL(NORMAL DEPTH, Dn), AND FLOWS IN EXCESS
 OF (.82)(DIAMETER) ARE PONDED AT THE UPSTREAM INLET:
 UNIT INTERVAL FLOW VELOCITY COMPUTED USING Dn UP TO
 (0.938)(DIAMETER):

PIPELENGTH(FT) = 75.00 MANNINGS FACTOR = 0.013
 UPSTREAM ELEVATION(FT) = 769.00
 DOWNSTREAM ELEVATION(FT) = 760.00
 PIPE DIAMETER(FT) = 1.50

NORMAL DEPTH VELOCITY PIPE ROUTING RESULTS:

TIME (HRS)	INFLOW (CFS)	VELOCITY (FPS)	OUTFLOW (CFS)	UPSTREAM PONDING(AF)
15.000	1.43	8.41	1.43	0.000
15.017	1.44	8.49	1.44	0.000
15.033	1.46	8.57	1.46	0.000
15.050	1.47	8.65	1.47	0.000
15.067	1.48	8.72	1.48	0.000
15.083	1.49	8.79	1.49	0.000
15.100	1.50	8.85	1.50	0.000
15.117	1.51	8.92	1.51	0.000
15.133	1.53	8.98	1.53	0.000
15.150	1.54	9.04	1.54	0.000
15.167	1.55	9.12	1.55	0.000
15.183	1.57	9.22	1.57	0.000
15.200	1.58	9.32	1.58	0.000
15.217	1.60	9.44	1.60	0.000
15.233	1.62	9.56	1.62	0.000
15.250	1.65	9.69	1.65	0.000
15.267	1.67	9.82	1.67	0.000
15.283	1.69	9.96	1.69	0.000
15.300	1.71	10.09	1.71	0.000
15.317	1.74	10.22	1.74	0.000
15.333	1.76	10.33	1.76	0.000
15.350	1.78	10.45	1.78	0.000
15.367	1.79	10.56	1.79	0.000
15.383	1.81	10.66	1.81	0.000
15.400	1.83	10.72	1.83	0.000
15.417	1.85	10.74	1.84	0.000
15.433	1.86	10.76	1.86	0.000
15.450	1.88	10.78	1.88	0.000
15.467	1.89	10.80	1.89	0.000
15.483	1.90	10.81	1.90	0.000

15.500	1.91	10.82	1.91	0.000
15.517	1.92	10.83	1.92	0.000
15.533	1.92	10.84	1.92	0.000
15.550	1.93	10.84	1.93	0.000
15.567	1.93	10.85	1.93	0.000
15.583	1.94	10.86	1.94	0.000
15.600	1.95	10.87	1.95	0.000
15.617	1.96	10.89	1.96	0.000
15.633	1.98	10.91	1.98	0.000
15.650	2.01	10.94	2.00	0.000
15.667	2.03	10.97	2.03	0.000
15.683	2.06	11.01	2.06	0.000
15.700	2.09	11.04	2.08	0.000
15.717	2.12	11.08	2.11	0.000
15.733	2.16	11.13	2.15	0.000
15.750	2.22	11.21	2.22	0.000
15.767	2.31	11.31	2.30	0.000
15.783	2.40	11.44	2.40	0.000
15.800	2.52	11.57	2.51	0.000
15.817	2.64	11.72	2.63	0.000
15.833	2.76	11.88	2.75	0.000
15.850	2.97	12.14	2.96	0.000
15.867	3.27	12.52	3.25	0.000
15.883	3.53	12.84	3.51	0.000
15.900	3.72	13.05	3.70	0.000
15.917	3.88	13.20	3.87	0.000
15.933	4.03	13.35	4.02	0.000
15.950	4.19	13.50	4.18	0.000
15.967	4.34	13.65	4.33	0.000
15.983	4.50	13.80	4.49	0.000
16.000	4.65	13.95	4.64	0.000
16.017	4.97	14.26	4.95	0.000
16.033	5.68	14.89	5.64	0.000
16.050	6.67	15.61	6.61	0.000
16.067	7.73	16.33	7.68	0.000
16.083	8.82	16.97	8.77	0.000
16.100	9.91	17.57	9.85	0.000
16.117	10.97	18.14	10.92	0.000
16.133	12.03	18.52	11.97	0.000
16.150	13.08	18.91	13.03	0.000
16.167	13.50	19.07	13.48	0.000
16.183	12.96	18.87	12.99	0.000
16.200	11.86	18.46	11.92	0.000
16.217	10.53	17.91	10.60	0.000
16.233	9.15	17.16	9.21	0.000
16.250	7.75	16.34	7.82	0.000
16.267	6.39	15.41	6.47	0.000
16.283	5.04	14.32	5.12	0.000
16.300	3.81	13.13	3.88	0.000
16.317	3.05	12.24	3.10	0.000
16.333	2.82	11.95	2.83	0.000
16.350	2.73	11.84	2.74	0.000
16.367	2.64	11.72	2.64	0.000
16.383	2.54	11.60	2.55	0.000
16.400	2.44	11.48	2.44	0.000
16.417	2.33	11.34	2.34	0.000
16.433	2.22	11.21	2.23	0.000
16.450	2.12	11.08	2.13	0.000
16.467	2.04	10.98	2.04	0.000
16.483	1.97	10.89	1.97	0.000
16.500	1.91	10.82	1.92	0.000
16.517	1.87	10.77	1.87	0.000
16.533	1.83	10.72	1.83	0.000
16.550	1.80	10.59	1.80	0.000

16.567	1.77	10.44	1.77	0.000
16.583	1.75	10.30	1.75	0.000
16.600	1.73	10.18	1.73	0.000
16.617	1.71	10.04	1.71	0.000
16.633	1.68	9.89	1.68	0.000
16.650	1.65	9.74	1.65	0.000
16.667	1.63	9.58	1.63	0.000
16.683	1.60	9.42	1.60	0.000
16.700	1.57	9.25	1.57	0.000
16.717	1.54	9.08	1.54	0.000
16.733	1.51	8.91	1.51	0.000
16.750	1.49	8.75	1.49	0.000
16.767	1.46	8.60	1.46	0.000
16.783	1.44	8.45	1.44	0.000
16.800	1.41	8.31	1.41	0.000
16.817	1.39	8.18	1.39	0.000
16.833	1.37	8.04	1.37	0.000
16.850	1.34	7.91	1.34	0.000
16.867	1.32	7.79	1.32	0.000
16.883	1.30	7.66	1.30	0.000
16.900	1.28	7.54	1.28	0.000
16.917	1.26	7.43	1.26	0.000
16.933	1.24	7.33	1.24	0.000
16.950	1.23	7.22	1.23	0.000
16.967	1.21	7.12	1.21	0.000
16.983	1.19	7.03	1.19	0.000
17.000	1.18	6.93	1.18	0.000
17.017	1.16	6.84	1.16	0.000
17.033	1.15	6.75	1.15	0.000
17.050	1.13	6.66	1.13	0.000
17.067	1.12	6.59	1.12	0.000
17.083	1.11	6.51	1.11	0.000
17.100	1.09	6.44	1.09	0.000
17.117	1.08	6.37	1.08	0.000
17.133	1.07	6.31	1.07	0.000
17.150	1.06	6.24	1.06	0.000
17.167	1.05	6.18	1.05	0.000
17.183	1.04	6.12	1.04	0.000
17.200	1.03	6.06	1.03	0.000
17.217	1.02	6.00	1.02	0.000
17.233	1.01	5.94	1.01	0.000
17.250	1.00	5.89	1.00	0.000
17.267	0.99	5.84	0.99	0.000
17.283	0.98	5.78	0.98	0.000
17.300	0.97	5.73	0.97	0.000
17.317	0.97	5.68	0.97	0.000
17.333	0.96	5.63	0.96	0.000
17.350	0.95	5.59	0.95	0.000
17.367	0.94	5.54	0.94	0.000
17.383	0.93	5.50	0.93	0.000
17.400	0.93	5.46	0.93	0.000
17.417	0.92	5.42	0.92	0.000
17.433	0.91	5.38	0.91	0.000
17.450	0.91	5.34	0.91	0.000
17.467	0.90	5.31	0.90	0.000
17.483	0.90	5.27	0.90	0.000
17.500	0.89	5.23	0.89	0.000
17.517	0.88	5.20	0.88	0.000
17.533	0.88	5.17	0.88	0.000
17.550	0.87	5.13	0.87	0.000
17.567	0.87	5.10	0.87	0.000
17.583	0.86	5.07	0.86	0.000
17.600	0.86	5.04	0.86	0.000
17.617	0.85	5.01	0.85	0.000

17.633	0.85	4.97	0.85	0.000
17.650	0.84	4.95	0.84	0.000
17.667	0.84	4.92	0.84	0.000
17.683	0.83	4.89	0.83	0.000
17.700	0.83	4.86	0.83	0.000
17.717	0.82	4.83	0.82	0.000
17.733	0.82	4.80	0.82	0.000
17.750	0.81	4.78	0.81	0.000
17.767	0.81	4.75	0.81	0.000
17.783	0.80	4.72	0.80	0.000
17.800	0.80	4.70	0.80	0.000
17.817	0.79	4.67	0.79	0.000
17.833	0.79	4.65	0.79	0.000
17.850	0.79	4.63	0.79	0.000
17.867	0.78	4.60	0.78	0.000
17.883	0.78	4.58	0.78	0.000
17.900	0.77	4.55	0.77	0.000
17.917	0.77	4.53	0.77	0.000
17.933	0.77	4.51	0.77	0.000
17.950	0.76	4.49	0.76	0.000
17.967	0.76	4.46	0.76	0.000
17.983	0.75	4.44	0.75	0.000
18.000	0.75	4.42	0.75	0.000
18.017	0.75	4.40	0.75	0.000
18.033	0.74	4.37	0.74	0.000
18.050	0.74	4.33	0.74	0.000
18.067	0.72	4.26	0.72	0.000
18.083	0.71	4.18	0.71	0.000
18.100	0.69	4.09	0.69	0.000
18.117	0.68	3.98	0.68	0.000
18.133	0.66	3.87	0.66	0.000
18.150	0.64	3.75	0.64	0.000
18.167	0.62	3.63	0.62	0.000
18.183	0.60	3.52	0.60	0.000
18.200	0.58	3.42	0.58	0.000
18.217	0.57	3.35	0.57	0.000
18.233	0.56	3.28	0.56	0.000
18.250	0.55	3.23	0.55	0.000
18.267	0.54	3.19	0.54	0.000
18.283	0.54	3.15	0.54	0.000
18.300	0.53	3.12	0.53	0.000
18.317	0.53	3.09	0.53	0.000
18.333	0.52	3.07	0.52	0.000
18.350	0.52	3.05	0.52	0.000
18.367	0.51	3.03	0.51	0.000
18.383	0.51	3.01	0.51	0.000
18.400	0.51	2.99	0.51	0.000
18.417	0.51	2.97	0.51	0.000
18.433	0.50	2.96	0.50	0.000
18.450	0.50	2.94	0.50	0.000
18.467	0.50	2.93	0.50	0.000
18.483	0.49	2.91	0.49	0.000
18.500	0.49	2.90	0.49	0.000
18.517	0.49	2.88	0.49	0.000
18.533	0.49	2.87	0.49	0.000
18.550	0.49	2.86	0.49	0.000
18.567	0.48	2.85	0.48	0.000
18.583	0.48	2.83	0.48	0.000
18.600	0.48	2.82	0.48	0.000
18.617	0.48	2.81	0.48	0.000
18.633	0.47	2.79	0.47	0.000
18.650	0.47	2.78	0.47	0.000
18.667	0.47	2.77	0.47	0.000
18.683	0.47	2.76	0.47	0.000

18.700	0.47	2.75	0.47	0.000
18.717	0.46	2.74	0.46	0.000
18.733	0.46	2.72	0.46	0.000
18.750	0.46	2.71	0.46	0.000
18.767	0.46	2.70	0.46	0.000
18.783	0.46	2.69	0.46	0.000
18.800	0.46	2.68	0.46	0.000
18.817	0.45	2.67	0.45	0.000
18.833	0.45	2.66	0.45	0.000
18.850	0.45	2.65	0.45	0.000
18.867	0.45	2.64	0.45	0.000
18.883	0.45	2.63	0.45	0.000
18.900	0.44	2.62	0.44	0.000
18.917	0.44	2.61	0.44	0.000
18.933	0.44	2.60	0.44	0.000
18.950	0.44	2.59	0.44	0.000
18.967	0.44	2.58	0.44	0.000
18.983	0.44	2.57	0.44	0.000
19.000	0.43	2.56	0.43	0.000

FLOW PROCESS FROM NODE 208.00 TO NODE 208.00 IS CODE = 1.2

>>>>SUBAREA RUNOFF (SMALL AREA UNIT-HYDROGRAPH ANALYSIS) <<<<<
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(SMALL AREA UNIT-HYDROGRAPH ADDED TO STREAM #1)

RATIONAL METHOD CALIBRATION COEFFICIENT = 0.90
TOTAL CATCHMENT AREA(ACRES) = 1.50
SOIL-LOSS RATE, Fm, (INCH/HR) = 0.022
LOW LOSS FRACTION = 0.106
TIME OF CONCENTRATION (MIN.) = 11.05
SMALL AREA PEAK Q COMPUTED USING PEAK FLOW RATE FORMULA
USER SPECIFIED RAINFALL VALUES ARE USED:
RETURN FREQUENCY(YEARS) = 25
5-MINUTE POINT RAINFALL VALUE (INCHES) = 0.43
30-MINUTE POINT RAINFALL VALUE (INCHES) = 0.94
1-HOUR POINT RAINFALL VALUE (INCHES) = 1.24
3-HOUR POINT RAINFALL VALUE (INCHES) = 2.09
6-HOUR POINT RAINFALL VALUE (INCHES) = 2.91
24-HOUR POINT RAINFALL VALUE (INCHES) = 4.83

TOTAL CATCHMENT RUNOFF VOLUME(ACRE-FEET) = 0.50
TOTAL CATCHMENT SOIL-LOSS VOLUME(ACRE-FEET) = 0.10

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2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

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HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)

(Notes: Time indicated is at END of Each Unit Intervals.
Peak 5-minute rainfall intensity is modeled as
a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	1.1	2.2	3.3	4.4
14.000	0.1794	0.41	. Q	. V	.	.	.
14.017	0.1799	0.41	. Q	. V	.	.	.
14.033	0.1805	0.41	. Q	. V	.	.	.
14.050	0.1811	0.41	. Q	. V	.	.	.
14.067	0.1816	0.41	. Q	. V	.	.	.
14.083	0.1822	0.41	. Q	. V	.	.	.
14.100	0.1828	0.41	. Q	. V	.	.	.
14.117	0.1834	0.41	. Q	. V	.	.	.
14.133	0.1839	0.42	. Q	. V	.	.	.
14.150	0.1845	0.42	. Q	. V	.	.	.
14.167	0.1851	0.42	. Q	. V	.	.	.
14.183	0.1857	0.42	. Q	. V	.	.	.
14.200	0.1862	0.42	. Q	. V	.	.	.
14.217	0.1868	0.43	. Q	. V	.	.	.
14.233	0.1874	0.43	. Q	. V	.	.	.
14.250	0.1880	0.43	. Q	. V	.	.	.
14.267	0.1886	0.43	. Q	. V	.	.	.
14.283	0.1892	0.44	. Q	. V	.	.	.
14.300	0.1898	0.44	. Q	. V	.	.	.
14.317	0.1904	0.44	. Q	. V	.	.	.
14.333	0.1910	0.44	. Q	. V	.	.	.
14.350	0.1916	0.45	. Q	. V	.	.	.
14.367	0.1923	0.45	. Q	. V	.	.	.
14.383	0.1929	0.45	. Q	. V	.	.	.
14.400	0.1935	0.45	. Q	. V	.	.	.
14.417	0.1941	0.45	. Q	. V	.	.	.
14.433	0.1947	0.45	. Q	. V	.	.	.
14.450	0.1954	0.46	. Q	. V	.	.	.
14.467	0.1960	0.46	. Q	. V	.	.	.
14.483	0.1966	0.46	. Q	. V	.	.	.
14.500	0.1973	0.46	. Q	. V	.	.	.
14.517	0.1979	0.46	. Q	. V	.	.	.
14.533	0.1985	0.46	. Q	. V	.	.	.
14.550	0.1992	0.47	. Q	. V	.	.	.
14.567	0.1998	0.47	. Q	. V	.	.	.
14.583	0.2005	0.48	. Q	. V	.	.	.
14.600	0.2011	0.48	. Q	. V	.	.	.
14.617	0.2018	0.48	. Q	. V	.	.	.
14.633	0.2025	0.49	. Q	. V	.	.	.
14.650	0.2032	0.49	. Q	. V	.	.	.
14.667	0.2038	0.49	. Q	. V	.	.	.
14.683	0.2045	0.50	. Q	. V	.	.	.
14.700	0.2052	0.50	. Q	. V	.	.	.
14.717	0.2059	0.51	. Q	. V	.	.	.
14.733	0.2066	0.51	. Q	. V	.	.	.
14.750	0.2073	0.51	. Q	. V	.	.	.
14.767	0.2080	0.51	. Q	. V	.	.	.
14.783	0.2087	0.52	. Q	. V	.	.	.
14.800	0.2095	0.52	. Q	. V	.	.	.
14.817	0.2102	0.52	. Q	. V	.	.	.

14.833	0.2109	0.52	. Q	. V	.	.	.
14.850	0.2116	0.53	. Q	. V	.	.	.
14.867	0.2123	0.53	. Q	. V	.	.	.
14.883	0.2131	0.53	. Q	. V	.	.	.
14.900	0.2138	0.53	. Q	. V	.	.	.
14.917	0.2145	0.54	. Q	. V	.	.	.
14.933	0.2153	0.54	. Q	. V	.	.	.
14.950	0.2161	0.55	. Q	. V	.	.	.
14.967	0.2168	0.56	. Q	. V	.	.	.
14.983	0.2176	0.56	. Q	. V	.	.	.
15.000	0.2184	0.57	. Q	. V	.	.	.
15.017	0.2192	0.57	. Q	. V	.	.	.
15.033	0.2200	0.58	. Q	. V	.	.	.
15.050	0.2208	0.59	. Q	. V	.	.	.
15.067	0.2216	0.59	. Q	. V	.	.	.
15.083	0.2224	0.60	. Q	. V	.	.	.
15.100	0.2232	0.60	. Q	. V	.	.	.
15.117	0.2241	0.61	. Q	. V	.	.	.
15.133	0.2249	0.61	. Q	. V	.	.	.
15.150	0.2258	0.61	. Q	. V	.	.	.
15.167	0.2266	0.62	. Q	. V	.	.	.
15.183	0.2275	0.62	. Q	. V	.	.	.
15.200	0.2283	0.63	. Q	. V	.	.	.
15.217	0.2292	0.63	. Q	. V	.	.	.
15.233	0.2301	0.63	. Q	. V	.	.	.
15.250	0.2309	0.64	. Q	. V	.	.	.
15.267	0.2318	0.64	. Q	. V	.	.	.
15.283	0.2327	0.65	. Q	. V	.	.	.
15.300	0.2336	0.65	. Q	. V	.	.	.
15.317	0.2345	0.66	. Q	. V	.	.	.
15.333	0.2354	0.66	. Q	. V	.	.	.
15.350	0.2364	0.67	. Q	. V	.	.	.
15.367	0.2373	0.68	. Q	. V	.	.	.
15.383	0.2382	0.68	. Q	. V	.	.	.
15.400	0.2392	0.69	. Q	. V	.	.	.
15.417	0.2401	0.69	. Q	. V	.	.	.
15.433	0.2411	0.70	. Q	. V	.	.	.
15.450	0.2421	0.71	. Q	. V	.	.	.
15.467	0.2430	0.71	. Q	. V	.	.	.
15.483	0.2440	0.71	. Q	. V	.	.	.
15.500	0.2450	0.71	. Q	. V	.	.	.
15.517	0.2460	0.71	. Q	. V	.	.	.
15.533	0.2470	0.71	. Q	. V	.	.	.
15.550	0.2480	0.72	. Q	. V	.	.	.
15.567	0.2489	0.72	. Q	. V	.	.	.
15.583	0.2499	0.72	. Q	. V	.	.	.
15.600	0.2509	0.72	. Q	. V	.	.	.
15.617	0.2519	0.72	. Q	. V	.	.	.
15.633	0.2529	0.72	. Q	. V	.	.	.
15.650	0.2539	0.74	. Q	. V	.	.	.
15.667	0.2550	0.78	. Q	. V	.	.	.
15.683	0.2561	0.81	. Q	. V	.	.	.
15.700	0.2573	0.85	. Q	. V	.	.	.
15.717	0.2585	0.88	. Q	. V	.	.	.
15.733	0.2598	0.92	. Q	. V	.	.	.
15.750	0.2611	0.95	. Q	. V	.	.	.
15.767	0.2624	0.98	. Q	. V	.	.	.
15.783	0.2638	1.02	. Q	.V	.	.	.
15.800	0.2653	1.05	. Q	.V	.	.	.
15.817	0.2668	1.09	. Q	.V	.	.	.
15.833	0.2683	1.12	. Q	.V	.	.	.
15.850	0.2699	1.16	. Q	.V	.	.	.
15.867	0.2716	1.20	. Q	.V	.	.	.
15.883	0.2733	1.24	. Q	.V	.	.	.

15.900	0.2750	1.28	.	.Q	.V	.	.
15.917	0.2769	1.32	.	.Q	.V	.	.
15.933	0.2787	1.35	.	.Q	.V	.	.
15.950	0.2806	1.39	.	.Q	.V	.	.
15.967	0.2826	1.43	.	.Q	.V	.	.
15.983	0.2846	1.47	.	.Q	.V	.	.
16.000	0.2867	1.51	.	.Q	.V	.	.
16.017	0.2890	1.66	.	.Q	.V	.	.
16.033	0.2917	1.92	.	.Q	.V	.	.
16.050	0.2947	2.18	.	.Q	.V	.	.
16.067	0.2980	2.44	.	.Q	.V	.	.
16.083	0.3017	2.70	.	.Q	.V	.	.
16.100	0.3058	2.97	.	.Q	.V	.	.
16.117	0.3103	3.23	.	.Q	.V	.	.
16.133	0.3151	3.49	.	.Q	.V	.	.
16.150	0.3202	3.75	.	.Q	.V	.	.
16.167	0.3258	4.01	.	.Q	.V	.	.
16.183	0.3318	4.42	.	.Q	.V	.	.
16.200	0.3377	4.27	.	.Q	.V	.	.
16.217	0.3432	3.95	.	.Q	.V	.	.
16.233	0.3482	3.62	.	.Q	.V	.	.
16.250	0.3527	3.30	.	.Q	.V	.	.
16.267	0.3568	2.98	.	.Q	.V	.	.
16.283	0.3605	2.66	.	.Q	.V	.	.
16.300	0.3637	2.33	.	.Q	.V	.	.
16.317	0.3664	2.01	.	.Q	.V	.	.
16.333	0.3688	1.69	.	.Q	.V	.	.
16.350	0.3706	1.36	.	.Q	.V	.	.
16.367	0.3721	1.04	.	.Q	.V	.	.
16.383	0.3732	0.84	.	.Q	.V	.	.
16.400	0.3744	0.83	.	.Q	.V	.	.
16.417	0.3755	0.81	.	.Q	.V	.	.
16.433	0.3766	0.80	.	.Q	.V	.	.
16.450	0.3777	0.79	.	.Q	.V	.	.
16.467	0.3787	0.77	.	.Q	.V	.	.
16.483	0.3798	0.76	.	.Q	.V	.	.
16.500	0.3808	0.74	.	.Q	.V	.	.
16.517	0.3818	0.73	.	.Q	.V	.	.
16.533	0.3828	0.72	.	.Q	.V	.	.
16.550	0.3838	0.70	.	.Q	.V	.	.
16.567	0.3847	0.69	.	.Q	.V	.	.
16.583	0.3857	0.68	.	.Q	.V	.	.
16.600	0.3866	0.67	.	.Q	.V	.	.
16.617	0.3875	0.65	.	.Q	.V	.	.
16.633	0.3884	0.64	.	.Q	.V	.	.
16.650	0.3892	0.63	.	.Q	.V	.	.
16.667	0.3901	0.62	.	.Q	.V	.	.
16.683	0.3909	0.61	.	.Q	.V	.	.
16.700	0.3918	0.60	.	.Q	.V	.	.
16.717	0.3926	0.58	.	.Q	.V	.	.
16.733	0.3933	0.57	.	.Q	.V	.	.
16.750	0.3941	0.56	.	.Q	.V	.	.
16.767	0.3949	0.55	.	.Q	.V	.	.
16.783	0.3956	0.55	.	.Q	.V	.	.
16.800	0.3964	0.54	.	.Q	.V	.	.
16.817	0.3971	0.53	.	.Q	.V	.	.
16.833	0.3978	0.53	.	.Q	.V	.	.
16.850	0.3985	0.52	.	.Q	.V	.	.
16.867	0.3993	0.51	.	.Q	.V	.	.
16.883	0.3999	0.50	.	.Q	.V	.	.
16.900	0.4006	0.50	.	.Q	.V	.	.
16.917	0.4013	0.49	.	.Q	.V	.	.
16.933	0.4020	0.48	.	.Q	.V	.	.
16.950	0.4026	0.48	.	.Q	.V	.	.

16.967	0.4033	0.47	.	.Q	.	.	.V	.
16.983	0.4039	0.47	.	.Q	.	.	.V	.
17.000	0.4046	0.46	.	.Q	.	.	.V	.

 TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
 (Note: 100% of Peak Flow Rate estimate assumed to have
 an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1021.0
10%	825.0
20%	195.0
30%	130.0
40%	90.0
50%	75.0
60%	65.0
70%	45.0
80%	30.0
90%	15.0

 FLOW PROCESS FROM NODE 228.00 TO NODE 228.00 IS CODE = 11

>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<

 STREAM HYDROGRAPH IN ONE-MINUTE UNIT INTERVALS(CFS)
 (Notes: Time indicated is at END of Each Unit Intervals.
 Peak 5-minute rainfall intensity is modeled as
 a constant value for entire 5-minute period.)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	5.0	10.0	15.0	20.0
15.800	0.8918	3.56	.	.Q	.V	.	.
15.817	0.8969	3.71	.	.Q	.V	.	.
15.833	0.9022	3.88	.	.Q	.V	.	.
15.850	0.9079	4.12	.	.Q	.V	.	.
15.867	0.9140	4.45	.	.Q	.V	.	.
15.883	0.9206	4.75	.	.Q	.V	.	.
15.900	0.9274	4.98	.	.Q	.V	.	.
15.917	0.9346	5.18	.	.Q	.V	.	.
15.933	0.9420	5.38	.	.Q	.V	.	.
15.950	0.9497	5.57	.	.Q	.V	.	.
15.967	0.9576	5.77	.	.Q	.V	.	.
15.983	0.9658	5.96	.	.Q	.V	.	.
16.000	0.9743	6.15	.	.Q	.V	.	.
16.017	0.9834	6.61	.	.Q	.V	.	.
16.033	0.9938	7.56	.	.Q	.V	.	.
16.050	1.0059	8.79	.	.Q	.V	.	.
16.067	1.0199	10.12	.	.Q	.V	.	.
16.083	1.0356	11.47	.	.Q	.V	.	.
16.100	1.0533	12.82	.	.Q	.V	.	.
16.117	1.0728	14.14	.	.Q	.V	.	.
16.133	1.0941	15.46	.	.Q	.V	.	.
16.150	1.1172	16.78	.	.Q	.V	.	.
16.167	1.1413	17.49	.	.Q	.V	.	.
16.183	1.1653	17.41	.	.Q	.V	.	.
16.200	1.1876	16.19	.	.Q	.V	.	.
16.217	1.2076	14.55	.	.Q	.V	.	.
16.233	1.2253	12.84	.	.Q	.V	.	.
16.250	1.2406	11.13	.	.Q	.V	.	.

16.267	1.2536	9.44	.	.	Q	.	V	.
16.283	1.2643	7.78	.	.	Q	.	V	.
16.300	1.2729	6.22	.	.	Q	.	V	.
16.317	1.2799	5.11	.	.	Q	.	V	.
16.333	1.2861	4.52	.	.	Q	.	V	.
16.350	1.2918	4.10	.	.	Q	.	V	.
16.367	1.2969	3.68	.	.	Q	.	V	.
16.383	1.3015	3.39	.	.	Q	.	V	.
16.400	1.3060	3.27	.	.	Q	.	V	.
16.417	1.3104	3.15	.	.	Q	.	V	.
16.433	1.3146	3.03	.	.	Q	.	V	.
16.450	1.3186	2.92	.	.	Q	.	V	.
16.467	1.3225	2.82	.	.	Q	.	V	.
16.483	1.3262	2.73	.	.	Q	.	V	.
16.500	1.3299	2.66	.	.	Q	.	V	.
16.517	1.3335	2.60	.	.	Q	.	V	.
16.533	1.3370	2.55	.	.	Q	.	V	.
16.550	1.3404	2.50	.	.	Q	.	V	.
16.567	1.3438	2.46	.	.	Q	.	V	.
16.583	1.3472	2.43	.	.	Q	.	V	.
16.600	1.3505	2.40	.	.	Q	.	V	.
16.617	1.3537	2.36	.	.	Q	.	V	.
16.633	1.3569	2.32	.	.	Q	.	V	.
16.650	1.3601	2.29	.	.	Q	.	V	.
16.667	1.3632	2.25	.	.	Q	.	V	.
16.683	1.3662	2.21	.	.	Q	.	V	.
16.700	1.3692	2.17	.	.	Q	.	V	.
16.717	1.3721	2.13	.	.	Q	.	V	.
16.733	1.3750	2.09	.	.	Q	.	V	.
16.750	1.3778	2.05	.	.	Q	.	V	.
16.767	1.3806	2.02	.	.	Q	.	V	.
16.783	1.3833	1.98	.	.	Q	.	V	.
16.800	1.3860	1.95	.	.	Q	.	V	.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1009.0
10%	665.0
20%	175.0
30%	115.0
40%	80.0
50%	70.0
60%	55.0
70%	45.0
80%	35.0
90%	20.0

END OF FLOODSCx ROUTING ANALYSIS